

Fig. 1A
SEQ. ID NO:1

MTVARPSVPAALPLLGELPRLLLLVLCLPAVWGDCGLPPDVPNAQPALE 50
GRTSFPEDTVITYKCEESFVKIPGEKDSVICLKGSQWSDIEEFCNRSCEV 100
PTRLNSASLKQPYITQNYFPVGTVEYECPGYRREPSLSPKLTCLQNLK 150
WSTAVEFCKKKSCPNPGEIRNGQIDVPGGILFGATISFSCNTGYKLFGST 200
SSFCLISGSSVQWSDPLPECREIYCPAPPQIDNGIIQGERDHYGYRQSVT 250
YACNKGFTMIGEHSIYCTVNNDEGEWSGPPPECRGKSLTSKVPPTVQKPT 300
TVNVPTTEVSPTSQKTTTKTTTPNAQATRSTPVSRTTKHFHETTPNKGSG 350
TTSGETRLLSGHTCFTLTGLLGLTVMGLLT

Fig. 1B
SEQ. ID NO:2

1 ccgctgggcg tagctgcgac tcggcggagt cccggcggcg cgtccttggt ctaaccgggc
61 gcgccatgac cgtcgcgcgg ccgagcgtgc ccgcggcgct gccctcctc ggggagctgc
121 cccggetgct gctgctggtg ctggtgtgcc tgccggccgt gtggggtgac tgtggccttc
181 ccccagatgt acctaataac gtacaaatgt gaagaaagct ttgtgaaaat tcctggcgag aaggactcag
241 ctgtaataac gtacaaatgt gaagaaagct ttgtgaaaat tcctggcgag aaggactcag
301 tgatctgcct taagggcagt caatggtcag atattgaaga gttctgcaat cgtagctgcg
361 aggtgccaac aaggctaaat tctgcacccc tcaaacagcc ttatatcact cagaattatt
421 ttccagtcgg tactgttgtg gaatatgagt gccgtccagg ttacagaaga gaaccttctc
481 tatcaccaaa actaacttgc cttcagaatt taaaatgggc cacagcagtc gaattttgta
541 aaaagaaatc atgccctaata cccgggagaaa tacgaaatgg tcagattgat gtaccagggtg
601 gcatattatt tgggtgcaacc atctccttct catgtaacac aggggtacaaa ttatttggtc
661 cgacttctag tttttgtctt atttcaggca gctctgtcca gtggagtgac ccgttgccag
721 agtgcagaga aatttattgt ccagcaccac cacaattga caatggaata attcaagggg
781 aacgtgacca ttatggatat agacagctctg taacgtatgc atgtaataaa ggattcacca
841 tgattggaga gcactctatt tattgtactg tgaataatga tgaaggagag tggagtggcc
901 caccacctga atgcagagga aaatctctaa cttccaaggt cccaccaaca gttcagaaac
961 ctaccacagt aaatgttcca actacagaag tctcaccaac ttctcagaaa accaccacaa
1021 aaaccaccac accaaatgct caagcaacac ggagtacacc tgtttccagg acaaccaagc
1081 attttcatga acaaaccca aataaaggaa gtggaaccac ttcagggtact acccgtcttc
1141 tatctgggca cagtggtttc acgttgacag gtttgcttgg gacgctagta accatgggct
1201 tgctgactta gccaaagaag agttaagaag aaaatacaca caagtataca gactgttctt
1261 agtttcttag acttatctgc atattggata aaataaatgc aattgtgctc ttcatttagg
1321 atgctttcat tgtctttaag atgtgttagg aatgtcaaca gagcaaggag aaaaaaggca
1381 gtcctggaat cacattctta gcacacctac acctcttgaa aatagaacaa cttgcagaat
1441 tgagagtgat tcctttccta aaagtgtgag aaagcataga gatttggtcg tatttagaat
1501 gggatcacga ggaaaagaga aggaaagtga tttttttcca caagatctgt aatgttattt
1561 ccacttataa aggaaataaa aaatgaaaaa cattatttgg atatcaaaaag caaataaaaa
1621 cccaattcag tctcttctaa gcaaaattgc taaagagaga tgaaccacat tataaagtaa
1681 tctttggctg taaggcattt tcatctttcc ttcgggttgg caaaatattt taaaggtaaa
1741 acatgctggt gaaccagggg tggtgatggg gataaggggg gaatatagaa tgaaagactg
1801 aatcttcctt tggtgcacaa atagagtttg gaaaaagcct gtgaaagggtg tcttctttga
1861 cttaatgtct ttaaaagtat ccagagatac tacaatatta acataagaaa agattatata
1921 ttatttctga atcgagatgt ccatagtcac atttgtaaat cttattcttt tgtaaatatt
1981 atttatattt atttatgaca gtgaacattc tgattttaca tgtaaaacaa gaaaagttga
2041 agaagatatg tgaagaaaaa tgtatttttc ctaaatagaa ataaatgatc ccattttttg
2101 gt

Fig. 2

SEQ. ID NO:3

MCLGRMGASSPRSPPEVGPAPGLPFCCGGSLLAVVLLALPVAWGQCNA 50
PEWLPPFARPTNLTDEFEPITGYLNYECRPGYSGRPFSIICLKNSVWTGA 100
KDRCRKSCRNPPDPVNGMVHVIKGIQFGSQIKYSCTKGYRLIGSSSATC 150
IISGDTVWDNETPICDRIPCGLPPTITNGDFISTNRENFHYGSVVTYRC 200
NPGSGGRKVFELVGEPSIYCTSNDDQVGIWSGPAPQCIIPNKCTPPNVEN 250
GILVSDNRSLSLNEVVEFRCQPGFVMKGPRRVKQALNKWEPELPSCSR 300
VCQPPPDVLHAERTQRDKDNFSPGQEVFYSCPGYDLRGAASMRCTPQGD 350
WSPAAPTCEVKSCDDFMGQLLNGRVLFVNLQLGAKVDFVCDEGFQLKGS 400
SASYCVLAGMESLWNSSVPVCEQIFCPSPPVIPNGRHTGKPLEVFPFGKA 450
VNYTCDPHPDRGTSFDLIGESTIRCTSDPQNGVWSSPAPRCGILGHCQA 500
PDHFLFAKLKTQTNASDFPIGTSLKYECRPEYYGRPFSITCLDNLVWSSP 550
KDVKCRKSKCTPPDPVNGMVHVITDIQVGSRIYNSCTTGHRILIGHSSAEC 600
ILSGNAAHWSTKPPICQRI PCGLPPTIANGDFISTNRENFHYGSVVTYRC 650
NPGSGGRKVFELVGEPSIYCTSNDDQVGIWSGPAPQCIIPNKCTPPNVEN 700
GILVSDNRSLSLNEVVEFRCQPGFVMKGPRRVKQALNKWEPELPSCSR 750
VCQPPPDVLHAERTQRDKDNFSPGQEVFYSCPGYDLRGAASMRCTPQGD 800
WSPAAPTCEVKSCDDFMGQLLNGRVLFVNLQLGAKVDFVCDEGFQLKGS 850
SASYCVLAGMESLWNSSVPVCEQIFCPSPPVIPNGRHTGKPLEVFPFGKA 900
VNYTCDPHPDRGTSFDLIGESTIRCTSDPQNGVWSSPAPRCGILGHCQA 950
PDHFLFAKLKTQTNASDFPIGTSLKYECRPEYYGRPFSITCLDNLVWSSP 1000
KDVKCRKSKCTPPDPVNGMVHVITDIQVGSRIYNSCTTGHRILIGHSSAEC 1050
ILSGNTAHWSTKPPICQRI PCGLPPTIANGDFISTNRENFHYGSVVTYRC 1100
NLGSRGRKVFELVGEPSIYCTSNDDQVGIWSGPAPQCIIPNKCTPPNVEN 1150
GILVSDNRSLSLNEVVEFRCQPGFVMKGPRRVKQALNKWEPELPSCSR 1200
VCQPPPEILHGEHTPSHQDNFSPGQEVFYSCPGYDLRGAASLHCTPQGD 1250
WSPEAPRCVAVKSCDDFLGQLPHGRVLFPLNLQLGAKVSFVCDEGFRLKGS 1300
SVSHCVLVGMRSLSLWNSSVPVCEHIFCPNPPAILNGRHTGTPSGDIPYGKE 1350
ISYTCDDPHPDRGMTFNLIGESTIRCTSDPHGNGVWSSPAPRCESVVRAGH 1400
CKTPEQFPFASPTIPINDFEFPVGTSLNYECRPGYFGKMFSISCLNLVW 1450
SSVEDNCRKSCGPPPEPFNGMVHINTDTQFGSTVNYSNEGFRIGSPS 1500
TTCLVSGNNVTWDKKAPICEIISCEPPPTISNGDFYSNNRTSFHNGTVVT 1550
YQCHTGPGEQLFELVGERSIYCTSKDDQVGWSSPPPRCISTNKCTAPE 1600
VENAIRVPGNRSFFSLTEIIRFRCQPGFVMVGSHTVQCQTNGRWGPKLPH 1650
CSRVCQPPPEILHGEHTLSHQDNFSPGQEVFYSCPSYDLRGAASLHCTP 1700
QGDWSPEAPRCTVKSCDDFLGQLPHGRVLLPLNLQLGAKVSFVCDEGFRL 1750
KGRSASHCVLAGMKALWNSSVPVCEQIFCPNPPAILNGRHTGTPFGDIPY 1800
GKEISYACDTHPDRGMTFNLIGESSIRCTSDPQNGVWSSPAPRCESVVP 1850
AACPHPPKIQNGHYIGGHVSLYLPGMTISYTCDDPGYLLVGKGFIFCTDQG 1900
IWSQLDHYCKEVNCSFPLFMNGISKELEMKKVYHYGDYVTLKCEDGYTLE 1950
GSPWSQCQADDRWDPLAKCTSRADALIVGTLSGTIFFILLIIFLSWII 2000
LKHRKGNNAHENPKEVAIHLHSQGGSSVHPRTLQTNEENSRLP

Fig. 3
SEQ. ID NO:4

```
1  cgtgggtttgt agatgtgctt ggggagaatg ggggcoctct ctccaagaag cccggagcct
61  gtcggggccgc cggcgcccggt tctccccttc tgctgcggag gatccctgct ggcggttgtg
121  gtgctgcttg cgctgccgggt ggcctgggggt caatgcaatg ccccgagaatg gcttccattt
181  gccaggccta ccaacctaac tgatgagttt gagtttccca ttgggacata tctgaactat
241  gaatgccgcc ctggttatte cggaagaccg ttttctatca tctgcctaaa aaactcagtc
301  tggactgggtg ctaaggacag gtgcagacgt aaatcatgtc gtaatcctcc agatcctgtg
361  aatggcatgg tgcattgtgat caaaggcatc cagttcggat cccaaattaa atattcttgt
421  actaaaggat accgactcat tggttcctcg tctgccacat gcatcatctc aggtgatact
481  gtcatttggg ataataaagc acctatttgt gacagaattc cttgtgggct acccccacc
541  atcaccaatg gagatttcat tagcaccaac agagagaatt ttcactatgg atcagtgggtg
601  acctaccgct gcaatcctgg aagcggaggg agaaagggtg ttgagcttgt gggtagagccc
661  tccatatact gcaccagcaa tgacgatcaa gtgggcatct ggagcggccc cgcccctcag
721  tgcattatac ctaacaaatg cacgcctcca aatgtggaaa atggaatatt ggtatctgac
781  aacagaagct tattttcctt aaatgaagtt gtggagttaa ggtgtcagcc tggctttgtc
841  atgaaaggac cccgccgtgt gaagtgccag gccctgaaca aatgggagcc ggagctacca
901  agctgctcca ggggtatgtc gccacctcca gatgtcctgc atgctgagcg tacccaaagg
961  gacaaggaca acttttcacc tgggcaggaa gtgttctaca gctgtgagcc cggctacgac
1021  ctcagagggg ctgctctat gcgctgcaca cccagggag actggagccc tgcagcccc
1081  acatgtgaag tgaaatcctg tgatgacttc atgggccaac ttcttaatgg ccgtgtgcta
1141  tttccagtaa atctccagct tggagcaaaa gtggattttg tttgtgatga aggatttcaa
1201  ttaaaaggca gctctgctag ttactgtgtc ttggctggaa tggaaagcct ttggaatagc
1261  agtgttccag tgtgtgaaca aatcttttgt ccaagtcctc cagttattcc taatgggaga
1321  cacacaggaa aacctctgga agtctttccc tttggaaaag cagtaaatta cacatgcgac
1381  cccaccccag acagagggac gagcttcgac ctcatggag agagcaccat ccgctgcaca
1441  agtgaccctc aagggaatgg ggtttggagc agcctgccc ctgctgtgg aattctgggt
1501  cactgtcaag cccagatca tttctgtttt gccagttga aaacccaaac caatgcatct
1561  gactttccca ttgggacatc tttaaagtac gaatgccgtc ctgagtacta cgggaggcca
1621  ttctctatca catgtctaga taacctggtc tggtaagtc ccaaagatgt ctgtaaacgt
1681  aaatcatgta aaactcctcc agatccagtg aatggcatgg tgcattgtat cacagacatc
1741  caggttggat ccagaatcaa ctattcttgt actacagggc accgactcat tggctactca
1801  tctgctgaat gtatcctctc gggcaatgct gccattgga gcacgaagcc gccaatttgt
1861  caacgaattc cttgtgggct acccccacc atcgccaatg gagatttcat tagcaccaac
1921  agagagaatt ttcactatgg atcagtgggt acctaccgct gcaatcctgg aagcggaggg
1981  agaaagggtg ttgagcttgt gggtagagccc tccatatact gcaccagcaa tgacgatcaa
2041  gtgggcatct ggagcggccc gggccctcag tgcattatac ctaacaaatg cacgcctcca
2101  aatgtggaaa atggaatatt ggtatctgac aacagaagct tattttcctt aaatgaagtt
2161  gtggagttaa ggtgtcagcc tggctttgtc atgaaaggac cccgccgtgt gaagtgccag
2221  gccctgaaca aatgggagcc ggagctacca agctgctcca ggggtatgtc gccacctcca
2281  gatgtcctgc atgctgagcg tacccaaagg gacaaggaca acttttcacc cgggcaggaa
2341  gtgttctaca gctgtgagcc cggctatgac ctgagagggg ctgctctat gcgctgcaca
2401  cccagggag actggagccc tgcagcccc acatgtgaag tgaaatcctg tgatgacttc
2461  atgggccaac ttcttaatgg ccgtgtgcta tttccagtaa atctccagct tggagcaaaa
2521  gtggattttg tttgtgatga aggatttcaa ttaaaaggca gctctgctag ttattgtgtc
2581  ttggctggaa tggaaagcct ttggaatagc agtgttccag tgtgtgaaca aatcttttgt
2641  ccaagtcctc cagttattcc taatgggaga cacacaggaa aacctctgga agtctttccc
2701  tttggaaaag cagtaaatta cacatgcgac cccaccccag acagagggac gagcttcgac
2761  ctcatggag agagcaccat ccgctgcaca agtgaccctc aagggaatgg ggtttggagc
2821  agccctgccc ctgctgtgg aattctgggt cactgtcaag cccagatca tttctgtttt
2881  gccagttga aaacccaaac caatgcatct gactttccca ttgggacatc tttaaagtac
2941  gaatgcgctc ctgagtacta cgggaggcca ttctctatca catgtctaga taacctggtc
3001  tggtaagtc ccaagatgt ctgtaaacgt aaatcatgta aaactcctcc agatccagtg
3061  aatggcatgg tgcattgtgat cacagacatc caggttggat ccagaatcaa ctattcttgt
```

3121 actacagggc accgactcat tgggtcactca tctgctgaat gtatcctctc aggcaatact
3181 gcccatgtga gcaogaagcc gccaatgtgt caacgaattc cttgtgggct accccaacc
3241 atcgccaatg gagatttcat tagcaccaac agagagaatt ttcactatgg atcagtgggtg
3301 acctaccgct gcaatcttgg aagcagaggg agaaaggtgt ttgagcttgt gggtagagccc
3361 tccatatact gcaccagcaa tgacgatcaa gtgggcatct ggagcggccc cgccctcag
3421 tgcattatac ctaacaaatg cacgcctcca aatgtggaaa atggaatatt ggtatctgac
3481 aacagaagct tattttcctt aaatgaagtt gtggagttaa ggtgtcagcc tggctttgtc
3541 atgaaaggac cccgccgtgt gaagtgccag gccctgaaca aatgggagcc agagttacca
3601 agctgctcca ggggtgtgtca gccgcctcca gaaatcctgc atggtgagca taccccaagc
3661 catcaggaca acttttcacc tgggcaggaa gtgttctaca gctgtgagcc tggctatgac
3721 ctcagagggg ctgctctctt gcaactgcaca cccagggag actggagccc tgaagccccg
3781 agatgtgcag tgaaatcctg tgatgacttc ttgggtcaac tccctcatgg ccgtgtgcta
3841 tttccactta atctccagct tggggcaaag gtgtcctttg tctgtgatga agggtttgc
3901 tttaaaggga gttccgttag tcattgtgtc ttgggtggaa tgagaagcct ttggaataac
3961 agtgttcctg tgtgtgaaca tatcttttgt ccaaatcctc cagctatcct taatgggaga
4021 cacacaggaa ctccctctgg agatattccc tatggaaaag aaatatctta cacatgtgac
4081 cccacccag acagagggat gacctcaac ctcatgggg agagcaccat ccgctgcaca
4141 agtgaccctc atgggaatgg ggtttggagc agccctgccc ctgctgtga actttctgtt
4201 cgtgctggtc actgtaaaac cccagagcag tttccatttg ccagtcctac gatcccaatt
4261 aatgactttg agtttccagt cgggacatct ttgaattatg aatgccgtcc tgggtatttt
4321 gggaaaatgt tctctatctc ctgcctagaa aacttgggtc ggtcaagtgt tgaagacaac
4381 tgtagacgaa aatcatgtgg acctccacca gaacccttca atggaatggt gcatataaac
4441 acagatacac agtttggatc aacagttaat tattcttgta atgaagggtt tcgactcatt
4501 ggttcccat ctactacttg tctcgtctca ggcaataatg tcacatggga taagaaggca
4561 cctatttgtg agatcatatc ttgtgagcca cctccaacca tatccaatgg agacttctac
4621 agcaacaata gaacatcttt tcacaatgga acgggtggtaa cttaccagtg ccacactgga
4681 ccagatggag aacagctgtt tgagcttgtg ggagaacggc caatatattg caccagcaaa
4741 gatgatcaag ttgggtgtttg gagcagccct cccctcgggt gtatttctac taataaatgc
4801 acagctccag aagttgaaaa tgcaattaga gtaccaggaa acaggagttt cttttccctc
4861 actgagatca tcagatttag atgtcagccc gggtttgtca tggtagggtc ccacactgtg
4921 cagtgccaga ccaatggcag atgggggccc aagctgccac actgctccag ggtgtgtcag
4981 ccgcctccag aaatcctgca tgggtgagcat accctaagcc atcaggacaa cttttcacct
5041 gggcaggaag tgttctacag ctgtgagccc agctatgacc tcagaggggc tgcgtctctg
5101 cactgcacgc cccagggaga ctggagccct gaagccccta gatgtacagt gaaatcctgt
5161 gatgacttc tgggccaact ccctcatggc cgtgtgctac ttccacttaa tctccagctt
5221 ggggcaaagg tgtcctttgt ttgcgatgaa ggggtccgat taaaaggcag gtctgctagt
5281 cattgtgtct tggctggaat gaaagccctt tggaaatagca gtgttccagt gtgtgaacaa
5341 atcttttgtc caaatcctcc agctatcctt aatgggagac acacaggaac tccctttgga
5401 gatattccct atggaaaaga aatatcttac gcatgcgaca cccaccaga cagagggatg
5461 accttcaacc tcattgggga gagctccatc cgctgcacaa gtgaccctca agggaatggg
5521 gtttggagca gccctgcccc tcgctgtgaa ctttctgttc ctgctgcctg cccacatcca
5581 cccaagatcc aaaacgggca ttacattgga ggacacgtat ctctatatct tcctgggatg
5641 acaatcagct acacttgtga ccccggtac ctgttagtgg gaaagggtt cattttctgt
5701 acagaccagg gaatctggag ccaattggat cattattgca aagaagtaaa ttgtagcttc
5761 ccactgttta tgaatggaat ctogaaggag ttagaaatga aaaaagtata tcactatgga
5821 gattatgtga ctttgaagtg tgaagatggg tatactctgg aaggcagtc ctggagccag
5881 tgccaggcgg atgacagatg ggacctcct ctggccaaat gtacctctcg tgcacatgat
5941 gctctcatag ttggcacttt atctggtagc atcttcttta ttttactcat cattttcctc
6001 tcttggataa ttctaaagca cagaaaaggc aataatgcac atgaaaacc taaagaagtg
6061 gctatccatt tacattctca aggaggcagc agcgttcac cccgaactct gcaaacaat
6121 gaagaaaata gcagggtcct tccttgacaa agtactatac agctgaagaa catctcgaat
6181 acaattttgg tgggaaagga gccaatgat ttcaacagaa tcagatctga gcttcataaa
6241 gtctttgaag tgacttcaca gagacgcaga catgtgcact tgaagatgct gcccttccc
6301 tggtagctag caaagctcct gcctctttgt gtgcgtcact gtgaaacccc caccctctg
6361 cctcgtgcta aacgcacaca gtatctagtc aggggaaaag actgcattta ggagatagaa
6421 aatagtttgg attacttaaa ggaataagggt gttgcctgga atttctggtt tgtaagggtg

```

6481 tcactgttct tttttaaaat atttgtaata tggaatgggc tcagtaagaa gagcttggaa
6541 aatgcagaaa gttatgaaaa ataagtcact tataattatg ctacctactg ataaccactc
6601 ctaatatttt gattcatttt ctgcctatct tctttcacat atgtgttttt ttacatacgt
6661 acttttcccc ccttagtttg tttcctttta ttttatagag cagaacccta gtcttttaaa
6721 cagtttagag tgaaatatat gctatatcag tttttacttt ctctagggag aaaaattaat
6781 ttactagaaa ggcatagaat gatcatggga agagtgggta agactactga agagaaatat
6841 ttggaaaata agatttcgat atcttctttt tttttgagat ggagtctggc tctgtctccc
6901 aggctggagt gcagtggcgt aatctcggct cactgcaacg tccgcctccc g

```

Fig. 4A

SEQ. ID NO:5

```

MEPPGRRECPFPSWRFPGLLLAAMVLLLYSFS DACEEPPTFEAMELIGKP 50
KPYEIGERVVDYKCKKGYFYIPPLATH TICDRNHTWLPVSDDACYRETCP 100
YIRDPLNGQAVPANGTYEFGYQMHFICNEGYYLIGEEILYCELKGSVAIW 150
SGKPPICEKVLCTPPPKIKNGKHTFSEVEVFEXLDAVTYSCDPAPGDPDF 200
SLIGESTIYCGDNSVWSRAAPECKVVKCRFPVVEN GKQISGFGKKFYYKA 250
TVMFECDKGFYLDGSDTIVCDSNSTWDPPVPKCLKVSTSTTKSPASSAS 300
GPRPTYKPPVSNYPGYPKPEEGILDSL DVWVIAVIVIAIVGVAVICVVP 350
YRYLQRRKKKGKADGGA EYATYQTKSTTPAEORG

```

Fig. 4B

SEQ. ID NO:6

```

1 tctgtcttcc tccggagaaa taacagcgct ttcgogcgcc cgcattggagc ctcccggccg
61 ccgcgagtg ccttttcctt cctggcgctt tcttgggttg cttctggcgg ccatgggtgt
121 gctgctgtac tccttctccg atgcctgtga ggagccacca acatttgaag ctatggagct
181 cattggtaaa ccaaaacct actatgagat tggatgaacga gtagattata agtgtaaaaa
241 aggatacttc tatatacttc ctcttgccac ccatactatt tgtgatcgga atcatacatg
301 gctacctgtc tcagatgacg cctgttatag agaaacatgt ccataataac gggatccttt
361 aaatggccaa gcagtccttg caaatgggac ttacgagttt gggttatcaga tgcactttat
421 ttgtaatgag gggttattact taattgggtga agaaattcta tattgtgaac ttaaaggatc
481 agtagcaatt tggagcggta agccccaat atgtgaaaag gttttgtgta caccacctcc
541 aaaaataaaa aatggaaaac acacctttag tgaagtagaa gtatttgagt atcttgatgc
601 agtaacttat agttgtgatc ctgcacctgg accagatcca ttttcactta ttggagagag
661 cacgatttat tgtggtgaca attcagtggt gagtcgtgct gctccagagt gtaaagtggg
721 caaatgtcga tttccagtag tcgaaaatgg aaaacagata tcaggatttg gaaaaaatt
781 ttactacaaa gcaacagtta tgtttgaatg cgataagggt ttttacctcg atggcagcga
841 cacaattgtc tgtgacagta acagtacttg ggatccccca gttccaaagt gtcttaaagt
901 gtcgacttct tccactacaa aatctccagc gtccagtgcc tcaggtccta ggcctactta
961 caagcctcca gtctcaaatt atccaggata tcctaaacct gaggaaggaa tacttgacag
1021 tttggatgtt tgggtcattg ctgtgattgt tattgccata gttgttggag ttgcagtaat
1081 ttgtgttgtc ccgtacagat atcttcaaag gaggaagaag aaagggaaag cagatgggtg
1141 agctgaatat gccacttacc agactaaatc aaccactcca gcagagcaga gaggtgaat
1201 agattccaca acctgggttg ccagttcatc ttttgactct attaaaatct tcaatagtgt
1261 ttattctgta gtttcactct catgagtga actgtggcct agctaattat gcaatgtggc
1321 ttgaatgtag gtagcatcct ttgatgcttc tttgaaactt gtatgaattt gggatgaac
1381 agattgcctg ctttccctta aataacactt agatttattg gaccagtcag cacagcatgc
1441 ctggttgat taaagcagg atatgctgta ttttataaaa ttggcaaat tagagaaata
1501 tagttcacia tgaaattata ttttcttctg

```

Fig. 5

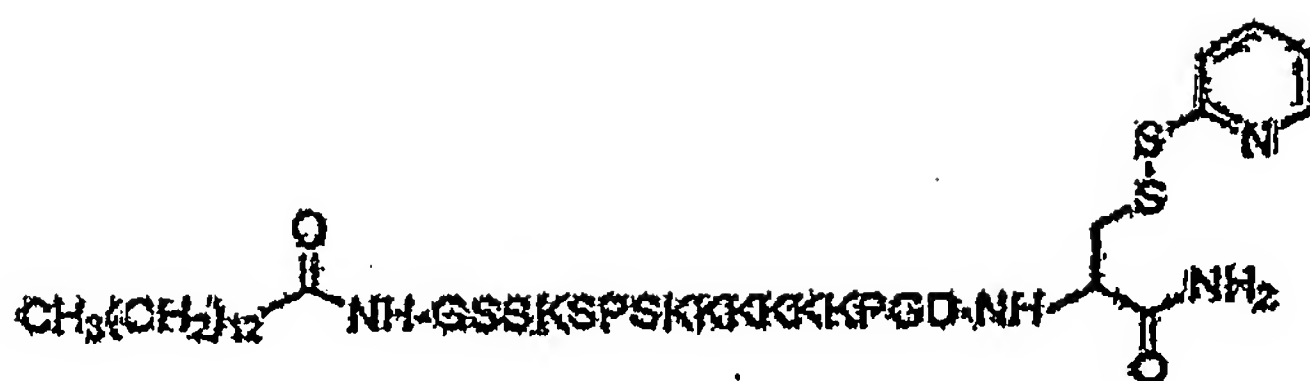


Fig. 6A

SEQ. ID NO:7

ATA TAC GAA TTC AGA TCT ATG ACC GTC GCG CGG CCG AGC GTG

Fig. 6B

SEQ. ID NO:8

ACA GTG CTC GAG CAT TCA GGT GGT GGG CCA CTC CA

Fig 7A

SEQ. ID NO:9

ATA TAC CTC GAG TCC TAA CAA ATG CAC GCC TCC AAA TGT GG-3

Fig 7B

SEQ. ID NO:10

ACA GTG ATG CAT TGG TTT GGG TTT TCA ACT TGG C

Fig 7C

SEQ. ID NO:11

ATA TAC ATG CAT CTG ACT TTC CCA TTG GGA CAT CTT TAA AG

Fig 7D

SEQ. ID NO:12

ACA GTG AGA TCT TTA GTG ATG GTG ATG GTG ATG AAT TCC ACA GCG AGG GGC
AGG GCT

Fig. 8A
SEQ ID NO:13

L L G E L P P R L M T V A R P S V P A A L P
D C G L P P D L L L V Q L V L A Q L C L P A V W G
P E D V T V I C I T K Y P N C E E S F E G R T S E K
D S V P G T C L R G G S W S D I V K E I P C N R S Y
C E V V P T R V L N S A S L K Q P Y R F C T Q P S L K
F P K C A P T N P G E I R N G S Q I D V P G S C G I K
S G A L I S G S S C N T W S D P L F G E S C T R S I
F C P A P P Q I A C N G I Q G L P E R C D H Y I G
Y R Q S V N T Y E G N K G F T M P I G E C H S
Y C T V N N D A C N E W S G P P L P E C H S
S S P N K C T P E V V E F N G C Q P G F D N
R S L F S L N C Q P P A L N K W E P G F V M
K G P R R V Q P P D V L H A E P E L P S
C S R V C Q P Q E V F Y S C E R T Q R D
K D N F S P G Q C T P Q G D W S P G Y D L
R G A A S M R C F M G Q L L N G A V L T
C E V K S C D D A K V D F V C D E G R Q F
P V N S A S L G A C V L A G M E S L W F S
K G S S A S Y I F C P S P P V I P N G R S
V P V C E Q I F C P F G K A V N Y T C D P
T G K P L E V F D L I G A P R C T I R C T S
H P D R G T S F D S S P A K R P E Y Y G C R G
D P Q G N G V W L K Y E C S M V H V I G H S
C Q A P D H F L V W N G H R L I G H S
F P I G T L D N P V C T T G H R L I G H S
S I C K T P P D P V C T T G H R L I G H S
S C K T P P D P V C T T G H R L I G H S
V G S R I N Y S C A T T G H R L I G H S
A E C I L S G N A A H W S T K P P I C Q
R I P C G L P P T I A N G D F I S T N R
E N F H Y G S V V T Y R C N P G S G G R
K V F E L V G A P Q S I Y C N S D D Q V
G I W S G P A P Q C I I P N K C T P P N
V E N G I L V S D N R S L F S L N C T P V
E F R C Q P G F V M K G P R V C Q P E V
L N K W E P E L P S D N K G S R V K P C Q
V L H A E R T Q R D L R G A A S M C P G C
F Y S C E P G Y A V L T C G E V N S C L G
Q G L L N G E R A V L F K V N S C L G Y I
D F V C D E L W N G F Q S H P K G E V F
A G M P V I P N G R S H P K G E V F
S P A V N Y T C D P H P D H P D

I G E S T I R C T S D P Q G N G V W S S
P A P R C G I H H H H H H

Fig. 8B

SEQ. ID NO: 14

ATGACCGTCGCGCGGCCGAGCGTGCCCGCGGCGCTGCCC
CTCCTCGGGGAGCTGCCCCGGCTGCTGCTGCTGGTGCTGTTGTGCCTGCCGGCCGTGTGGGGT
GACTGTGGCCTTCCCCCAGATGTACCTAATGCCCAGCCAGCTTTGGAAGGCCGTACAAGTTTT
CCCGAGGATACTGTAATAACGTACAAATGTGAAGAAAGCTTTGTGAAAATTCCTGGCGAGAAG
GACTCAGTGATCTGCCTTAAGGGCAGTCAATGGTCAGATATTGAAGAGTTCTGCAATCGTAGC
TGCGAGGTGCCAACAAGGCTAAATTCTGCATCCCTCAAACAGCCTTATATCACTCAGAATTAT
TTTCCAGTCGGTACTGTTGTGGAATATGAGTGCCGTCCAGGTTACAGAAGAGAACCCTTCTCTA
TCACCAAACTAACTTGCCCTCAGAATTTAAATGGTCCACAGCAGTCGAATTTTGTA AAAAG
AAATCATGCCCTAATCCGGGAGAAATACGAAATGGTCAGATTGATGTACCAGGTGGCATATTA
TTTGGTGCAACCATCTCCTTCTCATGTAACACAGGGTACAAATTATTTGGCTCGACTTCTAGT
TTTTGTCTTATTTTCAGGCAGCTCTGTCCAGTGGAGTGACCCGTTGCCAGAGTGCAGAGAAATT
TATTGTCCAGCACCACCACAAATTGACAATGGAATAATTCAAGGGGAACGTGACCATTTATGGA
TATAGACAGTCTGTAACGTATGCATGTAATAAAGGATTCACCATGATTGGAGAGCACTCTATT
TATTGTACTGTGAATAATGATGAAGGAGAGTGGAGTGGCCCCACCACCTGAATGC
TCGAGTCCTAACAAATGCACGCCTCCAAATGTGGAAAATGGAATATTGGTATCTGACAAC
AGAAGCTTATTTTCCTTAAATGAAGTTGTGGAGTTTAGGTGTGAGCCTGGCTTTGTGATG
AAAGGACCCCGCCGTGTGAAGTGCCAGGCCCTGAACAAATGGGAGCCGGAGCTACCAAGC
TGCTCCAGGGTATGTGAGCCACCTCCAGATGTCCTGCATGCTGAGCGTACCCAAAGGGAC
AAGGACAACCTTTTCACCTGGGCAGGAAGTGTCTACAGCTGTGAGCCCGGCTACGACCTC
AGAGGGGCTGCGTCTATGCGCTGCACACCCAGGGAGACTGGAGCCCTGCAGCCCCCACA
TGTGAAGTGAAATCCTGTGATGACTTCATGGGCCAACTTCTTAATGGCCGTGTGCTATTT
CCAGTAAATCTCCAGCTTGGAGCAAAAGTGGATTTTGTGTTGTGATGAAGGATTTCAATTA
AAAGGCAGCTCTGCTAGTTACTGTGTCTTGGCTGGAATGGAAAGCCTTTGGAATAGCAGT
GTTCCAGTGTGTGAACAAATCTTTTGTCCAAGTCTCCAGTTATTCCTAATGGGAGACAC
ACAGGAAAACCTCTGGAAGTCTTTCCCTTTGGAAAAGCAGTAAATTACACATGCGACCCC
CACCCAGACAGAGGGACGAGCTTCGACCTCATTGGAGAGAGCACCATCCGCTGCACAAGT
GACCCTCAAGGGAATGGGGTTTGGAGCAGCCCTGCCCCCTCGCTGTGGAATTCTGGGTCAC
TGTC AAGCCCCAGATCATTTTCTGTTTGCCAAGTTGAAAACCCAAACCAATGCATCTGAC
TTTCCCATTTGGGACATCTTTAAAGTACGAATGCCGTCTGAGTACTACGGGAGGCCATTC
TCTATCACATGTCTAGATAACCTGGTCTGGTCAAGTCCCAAAGATGTCTGTAAACGTAAA
TCATGTAAACTCCTCCAGATCCAGTGAATGGCATGGTGCATGTGATCACAGACATCCAG
GTTGGATCCAGAATCAACTATTCTTGTA CTACAGGGCACCGACTCATTGGTCACTCATCT
GCTGAATGTATCCTCTCGGGCAATGCTGCCCATTTGGAGCACGAAGCCGCCAATTTGTCAA
CGAATTCCTTGTGGGCTACCCCCACCATCGCCAATGGAGATTTTCATTAGCACCAACAGA
GAGAATTTTCACTATGGATCAGTGGTGACCTACCGCTGCAATCCTGGAAGCGGAGGGAGA
AAGGTGTTTGTGAGCTTGTGGGTGAGCCCTCCATATACTGCACCAGCAATGACGATCAAGTG
GGCATCTGGAGCGGCCCGGCCCTCAGTGCAATTATACCTAACAAATGCACGCCTCCAAAT
GTGGAAAATGGAATATTGGTATCTGACAACAGAAGCTTATTTTCCTTAAATGAAGTTGTG
GAGTTTAGGTGTGAGCCTGGCTTTGTGATGAAAGGACCCCGCCGTGTGAAGTGCCAGGCC
CTGAACAAATGGGAGCCGGAGCTACCAAGCTGCTCCAGGGTATGTCAGCCACCTCCAGAT
GTCCTGCATGCTGAGCGTACCCAAAGGGACAAGGACAACCTTTTCAACCGGGCAGGAAGTG
TTCTACAGCTGTGAGCCCGGCTATGACCTCAGAGGGGCTGCGTCTATGCGCTGCACACCC
CAGGGAGACTGGAGCCCTGCAGCCCCCACATGTGAAGTGAAATCCTGTGATGACTTCATG
GGCCAACTTCTTAATGGCCGTGTGCTATTTCCAGTAAATCTCCAGCTTGGAGCAAAAGTG

GATTTTGTGTTGTGATGAAGGATTTCAATTAAAAGGCAGCTCTGCTAGTTATTGTGTCTTG
GCTGGAATGGAAAGCCTTTGGAATAGCAGTGTTCCAGTGTTGAACAAATCTTTTGTCCA
AGTCCTCCAGTTATTCCTAATGGGAGACACACAGGAAAACCTCTGGAAGTCTTTCCCTTT
GGAAAAGCAGTAAATTACACATGCGACCCCCACCCAGACAGAGGGACGAGCTTCGACCTC
ATTGGAGAGAGCACCATCCGCTGCACAAGTGACCCTCAAGGGAATGGGGTTTGGAGCAGC
CCTGCCCTCGCTGTGGAATTCATCACCATCACCATCACTAAAGATCT

Fig. 9A
SEQ ID NO:15

	L	L	G	E	L	P	R	L	L	L	L	V	L	L	C	L	P	A	A	L	P
D	C	G	L	P	P	D	V	P	N	A	Q	P	A	L	E	G	R	T	S	F	
P	E	D	T	V	I	T	Y	K	C	E	E	S	F	V	K	I	P	G	E	K	
D	S	V	I	C	L	K	G	S	Q	W	S	D	I	E	E	F	C	N	R	S	
C	E	V	P	T	R	L	N	S	A	S	L	K	Q	P	Y	I	T	Q	N	Y	
F	P	V	G	T	V	V	E	Y	E	C	R	P	G	Y	R	R	E	P	S	L	
S	P	K	L	T	C	L	Q	N	L	K	W	S	T	A	V	E	F	C	K	K	
K	S	C	P	N	P	G	E	I	R	N	G	Q	I	D	V	P	G	G	I	L	
F	G	A	T	I	S	F	S	C	N	T	G	Y	K	L	F	G	S	T	S	S	
F	C	L	I	S	G	S	S	V	Q	W	S	D	P	L	P	E	C	R	E	I	
Y	C	P	A	P	P	Q	I	D	N	G	I	I	Q	G	E	R	D	H	Y	G	
Y	R	Q	S	V	T	Y	A	C	N	K	G	F	T	M	I	G	E	H	S	I	
Y	C	T	V	N	N	D	E	G	E	W	S	G	P	P	P	E	C				
S	S	P	N	K	C	T	P	P	N	V	E	N	G	I	L	V	S	D	N		
R	S	L	F	S	L	N	E	V	V	E	F	R	C	Q	P	G	F	V	M		
K	G	P	R	R	V	K	C	Q	A	L	N	K	W	E	P	E	L	P	S		
C	S	R	V	C	Q	P	P	P	D	V	L	H	A	E	R	T	Q	R	D		
K	D	N	F	S	P	G	Q	E	V	F	Y	S	C	E	P	G	Y	D	L		
R	G	A	A	S	M	R	C	T	P	Q	G	D	W	S	P	A	A	P	T		
C	E	V	K	S	C	D	D	F	M	G	Q	L	L	N	G	R	V	L	F		
P	V	N	L	Q	L	G	A	K	V	D	F	V	C	D	E	G	F	Q	L		
K	G	S	S	A	S	Y	C	V	L	A	G	M	E	S	L	W	N	S	S		
V	P	V	C	E	Q	I	F	C	P	S	P	P	V	I	P	N	G	R	H		
T	G	K	P	L	E	V	F	P	F	G	K	A	V	N	Y	T	C	D	P		
H	P	D	R	G	T	S	F	D	L	I	G	E	S	T	I	R	C	T	S		
D	P	Q	G	N	G	V	W	S	S	P	A	P	R	C	G	I	L	G	H		
C	Q	A	P	D	H	F	L	F	A	K	L	K	T	Q	T	N	A	S	D		
F	P	I	G	T	S	L	K	Y	E	C	R	P	E	Y	Y	G	R	P	F		
S	I	T	C	L	D	N	L	V	W	S	S	P	K	D	V	C	K	R	K		
S	C	K	T	P	P	D	P	V	N	G	M	V	H	V	I	T	D	I	Q		
V	G	S	R	I	N	Y	S	C	T	T	G	H	R	L	I	G	H	S	S		
A	E	C	I	L	S	G	N	A	A	H	W	S	T	K	P	P	I	C	Q		
R	I	P	C	G	L	P	P	T	I	A	N	G	D	F	I	S	T	N	R		
E	N	F	H	Y	G	S	V	V	T	Y	R	C	N	P	G	S	G	G	R		
K	V	F	E	L	V	G	E	P	S	I	Y	C	T	S	N	D	D	Q	V		
G	I	W	S	G	P	A	P	Q	C	I	I	P	N	K	C	T	P	P	N		

V E N G I L V S D N R S L F S L N E V V
E F R C Q P G F V M K G P R R V K C Q A
L N K W E P E L P S C S R V C Q P P D
V L H A E R T Q R D K D N F S P G Q E V
F Y S C E P G Y D L R G A A S M R C T P
Q G D W S P A A P T C E V K S C D D F M
G Q L L N G R V L F P V N L Q L G A K V
D F V C D E G F Q L K G S S A S Y C V L
A G M E S L W N S S V P V C E Q I F C P
S P P V I P N G R H T G K P L E V F P F
G K A V N Y T C D P H P D R G T S F D L
I G E S T I R C T S D P Q G N G V W S S
P A P R C G I L G H C Q A P D H F L F A
K L K T Q T N A S D F P I G T S L K Y E
C R P E Y Y G R P F S I T C L D N L V W
S S P K D V C K R K S C K T P P D P V N
G M V H V I T D I Q V
G S R I N Y S C T T G H R L I G H S S
A E C I L S G N A A H W S T K P P I C Q
R I P C G L P P T I A N G D F I S T N R
E N F H Y G S V V T Y R C N P G S G G R
K V F E L V G E P S I Y C T S N D D Q V
G I W S G P A P Q C I I P N K C T P P N
V E N G I L V S D N R S L F S L N E V V
E F R C Q P G F V M K G P R R V K C Q A
L N K W E P E L P S C S R V C Q P P D
V L H A E R T Q R D K D N F S P G Q E V
F Y S C E P G Y D L R G A A S M R C T P
Q G D W S P A A P T C E V K S C D D F M
G Q L L N G R V L F P V N L Q L G A K V
D F V C D E G F Q L K G S S A S Y C V L
A G M E S L W N S S V P V C E Q I F C P
S P P V I P N G R H T G K P L E V F P F
G K A V N Y T C D P H P D R G T S F D L
I G E S T I R C T S D P Q G N G V W S S
P A P R C G I H H H H H H H

Fig 9B

SEQ. ID NO:16

ATGACCGTCGCGCGGCCGAGCGTGCCCGCGGCGCTGCCC
CTCCTCGGGGAGCTGCCCCGGCTGCTGCTGCTGGTGCTGTTGTGCCTGCCGGCCGTGTGGGGT
GACTGTGGCCTTCCCCCAGATGTACCTAATGCCAGCCAGCTTTGGAAGGCCGTACAAGTTT
CCCGAGGATACTGTAATAACGTACAAATGTGAAGAAAGCTTTGTGAAAATTCCTGGCGAGAAG
GACTCAGTGATCTGCCTTAAGGGCAGTCAATGGTCAGATATTGAAGAGTTCTGCAATCGTAGC
TGCGAGGTGCCAACAAGGCTAAATTCTGCATCCCTCAAACAGCCTTATATCACTCAGAATTAT
TTCCAGTCGGTACTGTTGTGGAATATGAGTGCCGTCCAGGTTACAGAAGAGAACCTTCTCTA

TCACCAAACTAACTTGCCTTCAGAATTTAAAATGGTCCACAGCAGTCGAATTTTGTAAAAAG
AAATCATGCCCTAATCCGGGAGAAATACGAAATGGTCAGATTGATGTACCAGGTGGCATATTA
TTTGGTGCAACCATCTCCTTCTCATGTAACACAGGGTACAAATTATTTGGCTCGACTTCTAGT
TTTTGTCTTATTTTCAGGCAGCTCTGTCCAGTGGAGTGACCCGTTGCCAGAGTGCAGAGAAAT
TATTGTCCAGCACCACCACAAATTGACAATGGAATAATTCAAGGGGAACGTGACCATTATGGA
TATAGACAGTCTGTAACGTATGCATGTAATAAAGGATTCACCATGATTGGAGAGCACTCTATT
TATTGTACTGTGAATAATGATGAAGGAGAGTGGAGTGGCCCACCACCTGAATGC
TCGAGTCCTAACAAATGCACGCCTCCAAATGTGGAAAATGGAATATTGGTATCTGACAAC
AGAAGCTTATTTTCTTAAATGAAGTTGTGGAGTTTAGGTGTGAGCCTGGCTTTGTCTATG
AAAGGACCCCGCCGTGTGAAGTGCCAGGCCCTGAACAAATGGGAGCCGGAGCTACCAAGC
TGCTCCAGGGTATGTCAGCCACCTCCAGATGTCTGTCATGCTGAGCGTACCCAAAGGGAC
AAGGACAACTTTTCACCTGGGCAGGAAGTGTCTACAGCTGTGAGCCCGGCTACGACCTC
AGAGGGGCTGCGTCTATGCGCTGCACACCCAGGGAGACTGGAGCCCTGCAGCCCCCACA
TGTGAAGTGAAATCCTGTGATGACTTCATGGGCCAACTTCTTAATGGCCGTGTGCTATTT
CCAGTAAATCTCCAGCTTGGAGCAAAAGTGGATTTTGTTTGTGATGAAGGATTTCAATTA
AAAGGCAGCTCTGCTAGTTACTGTGTCTTGGCTGGAATGGAAAGCCTTTGGAATAGCAGT
GTTCCAGTGTGTGAACAAATCTTTTGTCCAAGTCTCCAGTTATTCCTAATGGGAGACAC
ACAGGAAAACCTCTGGAAGTCTTTCCCTTTGGAAAAGCAGTAAATTACACATGCGACCCC
CACCAGACAGAGGGACGAGCTTCGACCTCATTTGGAGAGAGCACCATCCGCTGCACAAGT
GACCCTCAAGGGAATGGGGTTTGGAGCAGCCCTGCCCCCTCGCTGTGGAATTCCTGGGTCAC
TGTCAAGCCCCAGATCATTTTCTGTTTGCCAAGTTGAAAACCCAAACCAATGCATCTGAC
TTTCCCATTGGGACATCTTTAAAGTACGAATGCCGTCTGAGTACTACGGGAGGCCATTCT
TCTATCACATGTCTAGATAACCTGGTCTGGTCAAGTCCCAAAGATGTCTGTAAACGTAAA
TCATGTAAAACTCCTCCAGATCCAGTGAATGGCATGGTGCATGTGATCACAGACATCCAG
GTTGGATCCAGAATCAACTATTCTTGTACTACAGGGCACCAGTCAATGGTCACTCATCT
GCTGAATGTATCCTCTCGGGCAATGCTGCCCATTGGAGCACGAAGCCGCCAATTTGTCAA
CGAATTCCTTGTGGGCTACCCCCCACCATCGCCAATGGAGATTTTCATTAGCACCAACAGA
GAGAATTTTCACTATGGATCAGTGGTGACCTACCGCTGCAATCCTGGAAGCGGAGGGAGA
AAGGTGTTTGAGCTTGTGGGTGAGCCCTCCATATACTGCACCAGCAATGACGATCAAGTG
GGCATCTGGAGCGGCCCCGGCCCCCTCAGTGCATTATACCTAACAAATGCACGCCTCCAAAT
GTGGAAAATGGAATATTGGTATCTGACAACAGAAGCTTATTTTCTTAAATGAAGTTGTG
GAGTTTAGGTGTGAGCCTGGCTTTGTCTATGAAAGGACCCCGCCGTGTGAAGTGCCAGGCC
CTGAACAAATGGGAGCCGGAGCTACCAAGCTGCTCCAGGGTATGTCAGCCACCTCCAGAT
GTCCTGCATGCTGAGCGTACCCAAAGGGACAAGGACAACCTTTTCACCCGGGCAGGAAGTG
TTCTACAGCTGTGAGCCCGGCTATGACCTCAGAGGGGCTGCGTCTATGCGCTGCACACCC
CAGGGAGACTGGAGCCCTGCAGCCCCCAGATGTGAAGTGAAATCCTGTGATGACTTCATG
GGCCAACTTCTTAATGGCCGTGTGCTATTTCCAGTAAATCTCCAGCTTGGAGCAAAAGTG
GATTTTGTGTGTGATGAAGGATTTCAATTAAAAGGCAGCTCTGCTAGTTATTGTGTCTTG
GCTGGAATGGAAAGCCTTTGGAATAGCAGTGTTCAGTGTGTGAACAAATCTTTTGTCCA
AGTCCTCCAGTTATTCCTAATGGGAGACACACAGGAAAACCTCTGGAAGTCTTTCCCTTT
GGAAAAGCAGTAAATTACACATGCGACCCCCACCCAGACAGAGGGACGAGCTTCGACCTC
ATTGGAGAGAGCACCATCCGCTGCACAAGTGACCTCAAGGGAATGGGGTTTGGAGCAGC
CCTGCCCCCTCGCTGTGGAATTCTGGGTCACTGTCAAGCCCCAGATCATTTCCTGTTTGCC
AAGTTGAAAACCCAAACCAATGCATCTGACTTTCCCATTTGGGACATCTTTAAAGTACGAA
TGCCGTCTGAGTACTACGGGAGGCCATTCTCTATCACATGTCTAGATAACCTGGTCTGG
TCAAGTCCCAAAGATGTCTGTAAACGTAAATCATGTAAACTCCTCCAGATCCAGTGAAT
GGCATGGTGCATGTGATCACAGACATCCAGTT
GGATCCAGAATCAACTATTCTTGTACTACAGGGCACCAGTCAATGGTCACTCATCT
GCTGAATGTATCCTCTCGGGCAATGCTGCCCATTGGAGCACGAAGCCGCCAATTTGTCAA
CGAATTCCTTGTGGGCTACCCCCCACCATCGCCAATGGAGATTTTCATTAGCACCAACAGA
GAGAATTTTCACTATGGATCAGTGGTGACCTACCGCTGCAATCCTGGAAGCGGAGGGAGA

12/25

12/25

AAGGTGTTTGAGCTTGTGGGTGAGCCCTCCATATACTGCACCAGCAATGACGATCAAGTG
GGCATCTGGAGCGGCCCGGCCCTCAGTGCATTATACCTAACAAATGCACGCCTCCAAAT
GTGGAAAATGGAATATTGGTATCTGACAACAGAAGCTTATTTTCCTTAAATGAAGTTGTG
GAGTTTAGGTGTCAGCCTGGCTTTGTCATGAAAGGACCCCGCCGTGTGAAGTGCCAGGCC
CTGAACAAATGGGAGCCGGAGCTACCAAGCTGCTCCAGGGTATGTCAGCCACCTCCAGAT
GTCCTGCATGCTGAGCGTACCCAAAGGGACAAGGACAACCTTTTCACCCGGGCAGGAAGTG
TTCTACAGCTGTGAGCCCGGCTATGACCTCAGAGGGGCTGCGTCTATGCGCTGCACACCC
CAGGGAGACTGGAGCCCTGCAGCCCCCACATGTGAAGTGAAATCCTGTGATGACTTCATG
GGCCAACTTCTTAATGGCCGTGTGCTATTTCCAGTAAATCTCCAGCTTGGAGCAAAAGTG
GATTTTGT TTGTGATGAAGGATTTCAATTAAAAGGCAGCTCTGCTAGTTATTGTGTCTTG
GCTGGAATGGAAAGCCTTTGGAATAGCAGTGTTCCAGTGTGTGAACAAATCTTTTGTCCA
AGTCCTCCAGTTATTCCTAATGGGAGACACACAGGAAAACCTCTGGAAGTCTTTCCCTTT
GGAAAAGCAGTAAATTACACATGCGACCCCCACCCAGACAGAGGGACGAGCTTCGACCTC
ATTGGAGAGAGCACCATCCGCTGCACAAGTGACCCTCAAGGGAATGGGGTTTGGAGCAGC
CCTGCCCTCGCTGTGGAATTCATCACCATCACCATCACTAAAGATCT

Fig. 10A

SEQ. ID NO:17

ATA TAC GAA TTC TGG TTG AGT CCA AAT ATG GTC CC

Fig. 10B

SEQ. ID NO:18

ACA GTG AGA TCT TTA TCA TTT ACC CGG AGA CAG GGA G

Fig. 11A

SEQ. ID NO:19

	M T V A R P S V P A A L P																				
	L	L	G	E	L	P	R	L	L	L	L	V	L	L	C	L	P	A	V	W	G
D	C	G	L	P	P	D	V	P	N	A	Q	P	A	L	E	G	R	T	S	F	
P	E	D	T	V	I	T	Y	K	C	E	E	S	F	V	K	I	P	G	E	K	
D	S	V	I	C	L	K	G	S	Q	W	S	D	I	E	E	F	C	N	R	S	
C	E	V	P	T	R	L	N	S	A	S	L	K	Q	P	Y	I	T	Q	N	Y	
F	P	V	G	T	V	V	E	Y	E	C	R	P	G	Y	R	R	E	P	S	L	
S	P	K	L	T	C	L	Q	N	L	K	W	S	T	A	V	E	F	C	K	K	
K	S	C	P	N	P	G	E	I	R	N	G	Q	I	D	V	P	G	G	I	L	
F	G	A	T	I	S	F	S	C	N	T	G	Y	K	L	F	G	S	T	S	S	
F	C	L	I	S	G	S	S	V	Q	W	S	D	P	L	P	E	C	R	E	I	
Y	C	P	A	P	P	Q	I	D	N	G	I	I	Q	G	E	R	D	H	Y	G	
Y	R	Q	S	V	T	Y	A	C	N	K	G	F	T	M	I	G	E	H	S	I	
Y	C	T	V	N	N	D	E	G	E	W	S	G	P	P	P	E	C				
S	S	P	N	K	C	T	P	P	N	V	E	N	G	I	L	V	S	D	N		

R S L F S L N E V V E F R C Q P G F V M
K G P R R V K C Q A L N K W E P E L P S
C S R V C Q P P P D V L H A E R T Q R D
K D N F S P G Q E V F Y S C E P G Y D L
R G A A S M R C T P Q G D W S P A A P T
C E V K S C D D F M G Q L L N G R V L F
P V N L Q L G A K V D F V C D E G F Q L
K G S S A S Y C V L A G M E S L W N S S
V P V C E Q I F C P S P P V I P N G R H
T G K P L E V F P F G K A V N Y T C D P
H P D R G T S F D L I G E S T I R C T S
D P Q G N G V W S S P A P R C G I L
V E S K Y G P P C P S C P A P E F L
G G P S V F L F P P K P K D T L M I S R
T P E V T C V V V D V S Q E D P E V Q F
N W Y V D G V E V H N A K T K P R E E Q
F N S T Y R V V S V L T V L H Q D W L N
G K E Y K C K V S N K G L P S S I E K T
I S K A K G Q P R E P Q V Y T L P P S Q
E E M T K N Q V S L T C L V K G F Y P S
D I A V E W E S N G Q P E D N Y K T T P
P V L D S D G S F F L Y S R L T V D K S
R W Q E G N V F S C S V M H E A L H N H
Y T Q K S L S L S P G K

Fig. 11B
SEQ. ID NO:20

ATGACCGTCGCGCGGCCGAGCGTGCCCGCGGCGCTGCCC
CTCCTCGGGGAGCTGCCCCGGCTGCTGCTGCTGGTGCTGTGTGCCTGCCGGCCGTGTGGGGT
GACTGTGGCCTTCCCCCAGATGTACCTAATGCCAGCCAGCTTTGGAAGGCCGTACAAGTTT
CCCGAGGATACTGTAATAACGTACAAATGTGAAGAAAGCTTTGTGAAAATTCTTGGCGAGAAG
GACTCAGTGATCTGCCTTAAGGGCAGTCAATGGTCAGATATTGAAGAGTTCTGCAATCGTAGC
TGCGAGGTGCCAACAAGGCTAAATTCTGCATCCCTCAAACAGCCTTATATCACTCAGAATTAT
TTTCCAGTCGGTACTGTTGTGGAATATGAGTGCCGTCCAGGTTACAGAAGAGAACCTTCTCTA
TCACCAAACTAACTTGCCTTCAGAATTTAAATGGTCCACAGCAGTCGAATTTTGTA AAAAG
AAATCATGCCCTAATCCGGGAGAAATACGAAATGGTCAGATTGATGTACCAGGTGGCATATTA
TTTGGTGCAACCATCTCCTTCTCATGTAACACAGGGTACAAATTATTTGGCTCGACTTCTAGT
TTTTGTCTTATTTTCAGGCAGCTCTGTCCAGTGGAGTGACCCGTTGCCAGAGTGCAGAGAAAT
TATTGTCCAGCACCACCACAAATTGACAATGGAATAATTCAAGGGGAACGTGACCATTATGGA
TATAGACAGTCTGTAACGTATGCATGTAATAAAGGATTCACCATGATTGGAGAGCACTCTATT
TATTGTACTGTGAATAATGATGAAGGAGAGTGGAGTGGCCCACCACCTGAATGC
TCGAGTCCTAACAAATGCACGCCTCCAAATGTGGAATGGAATATTGGTATCTGACAAC
AGAAGCTTATTTTCTTAAATGAAGTTGTGGAGTTTAGGTGTCAGCCTGGCTTTGTGTCATG
AAAGGACCCCGCGTGTGAAGTGCCAGGCCCTGAACAAATGGGAGCCGGAGCTACCAAGC
TGCTCCAGGGTATGTCAGCCACCTCCAGATGTCCTGCATGCTGAGCGTACCCAAAGGGAC
AAGGACAACCTTTTCACCTGGGCAGGAAGTGTCTACAGCTGTGAGCCCGGCTACGACCTC

AGAGGGGCTGCGTCTATGCGCTGCACACCCCAGGGAGACTGGAGCCCTGCAGCCCCCACA
TGTGAAGTGAAATCCTGTGATGACTTCATGGGCCAACTTCTTAATGGCCGTGTGCTATTT
CCAGTAAATCTCCAGCTTGGAGCAAAGTGGATTTTGTGTTGTGATGAAGGATTTCAATTA
AAAGGCAGCTCTGCTAGTTACTGTGTCTTGGCTGGAATGGAAAGCCTTTGGAATAGCAGT
GTTCCAGTGTGTGAACAAATCTTTTGTCCAAGTCCTCCAGTTATTCCTAATGGGAGACAC
ACAGGAAAACCTCTGGAAGTCTTTCCCTTTGGAAAAGCAGTAAATTACACATGCGACCCC
CACCCAGACAGAGGGACGAGCTTCGACCTCATTTGGAGAGAGCACCATCCGCTGCACAAGT
GACCCTCAAGGGAATGGGGTTTGGAGCAGCCCTGCCCTCGCTGTGGAATTCTG
GTTGAGTCCAAATATGGTCCCCCATGCCCATCATGCCAGCACCTGAGTTCCTG
GGGGGACCATCAGTCTTCCTGTTCCCCC AAAACCAAGGACACTCTCATGATCTCCCGG
ACCCCTGAGGTCACGTGCGTGGTGGTGGACGTGAGCCAGGAAGACCCCGAGGTCCAGTTC
AACTGGTACGTGGATGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGCGGGAGGAGCAG
TTCAACAGCACGTACCGTGTGGTCAGCGTCCTCACCGTCCTGCACCAGGACTGGCTGAAC
GGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGGCCTCCCGTCTCCATCGAGAAAACC
ATCTCCAAAGCCAAAGGGCAGCCCCGAGAGCCACAGGTGTACACCCTGCCCCCATCCCAG
GAGGAGATGACCAAGAACCAGGTGAGCCTGACCTGCCTGGTCAAAGGCTTCTACCCCAGC
GACATCGCCGTGGAGTGGGAGAGCAATGGGCAGCCGGAGGACAACTACAAGACCACGCCT
CCCGTGCTGGACTCCGACGGCTCCTTCTTCTCTACAGCAGGCTAACCCTGGACAAGAGC
AGGTGGCAGGAGGGGAATGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCAC
TACACACAGAAGAGCCTCTCCCTGTCTCCGGGTAAATGATAAAGATCT

Fig. 12A

SEQ. ID NO:21

ATA TAC GAA TTC TGG GTC ACT GTG AGG AGC CAC CAA CAT TTG AAG C

Fig. 12B

SEQ. ID NO:22

ACA GTG AGA TCT TTA GTG ATG GTG ATG GTG ATG CGA CAC TTT AAG ACA CTT
TGG AAC

Fig. 13A

SEQ. ID NO:23

M	T	V	A	R	P	S	V	P	A	A	L	P							
L	L	G	E	L	P	R	L	L	L	L	V	L	L	C	L	P	A	V	W
D	C	G	L	P	P	D	V	P	N	A	Q	P	A	L	E	G	R	T	S
P	E	D	T	V	I	T	Y	K	C	E	E	S	F	V	K	I	P	G	E
D	S	V	I	C	L	K	G	S	Q	W	S	D	I	E	E	F	C	N	R
C	E	V	P	T	R	L	N	S	A	S	L	K	Q	P	Y	I	T	Q	N
F	P	V	G	T	V	V	E	Y	E	C	R	P	G	Y	R	R	E	P	S
S	P	K	L	T	C	L	Q	N	L	K	W	S	T	A	V	E	F	C	K
K	S	C	P	N	P	G	E	I	R	N	G	Q	I	D	V	P	G	G	I
F	G	A	T	I	S	F	S	C	N	T	G	Y	K	L	F	G	S	T	S
F	C	L	I	S	G	S	S	V	Q	W	S	D	P	L	P	E	C	R	E

Y	C	P	A	P	P	Q	I	D	N	G	I	I	Q	G	E	R	D	H	Y	G
Y	R	Q	S	V	T	Y	A	C	N	K	G	F	T	M	I	G	E	H	S	I
Y	C	T	V	N	N	D	E	G	E	W	S	G	P	P	P	E	C			
<u>S</u>	<u>S</u>	<u>P</u>	<u>N</u>	<u>K</u>	<u>C</u>	<u>T</u>	<u>P</u>	<u>P</u>	<u>N</u>	<u>V</u>	<u>E</u>	<u>N</u>	<u>G</u>	<u>I</u>	<u>L</u>	<u>V</u>	<u>C</u>	<u>S</u>	<u>D</u>	<u>N</u>
R	S	L	F	S	L	N	E	V	V	E	F	R	C	Q	P	G	F	V	M	
K	G	P	R	R	V	K	C	Q	A	L	N	K	W	E	P	E	L	P	S	
C	S	R	V	C	Q	P	P	D	V	F	L	H	A	E	R	T	Q	R	D	
K	D	N	F	S	P	G	Q	E	V	F	Y	S	C	E	P	G	Y	D	L	
R	G	A	A	S	M	R	C	T	P	Q	G	D	W	S	P	A	A	P	T	
C	E	V	K	S	C	D	D	F	M	G	Q	L	L	N	G	R	V	L	F	
P	V	N	L	Q	L	G	A	K	V	D	F	V	C	D	E	G	F	Q	L	
K	G	S	S	A	S	Y	C	V	L	A	G	M	E	S	L	W	N	S	S	
V	P	V	C	E	Q	I	F	C	P	S	P	P	V	I	P	N	G	R	H	
T	G	K	P	L	E	V	F	P	F	G	K	A	V	N	Y	T	C	D	P	
H	P	D	R	G	T	S	F	D	L	I	G	E	S	T	I	R	C	T	S	
D	P	Q	G	N	G	V	W	S	S	P	A	P	R	C	G	I	L	G	H	
C	E	E	P	P	T	F	E	A	M	E	L	I	G	K	P	K	P	Y	Y	
E	I	G	E	R	V	D	Y	K	C	K	K	G	Y	F	Y	I	P	P	L	
A	T	H	T	I	C	D	R	N	H	T	W	L	P	V	S	D	D	A	C	
Y	R	E	T	C	P	Y	I	R	D	P	L	N	G	Q	A	V	P	A	N	
G	T	Y	E	F	G	Y	Q	M	H	F	I	C	N	E	G	Y	Y	L	I	
G	E	E	I	L	Y	C	E	L	K	G	S	V	A	I	W	S	G	K	P	
P	I	C	E	K	V	L	C	T	P	P	P	K	I	K	N	G	K	H	T	
F	S	E	V	E	V	F	E	Y	L	D	A	V	T	Y	S	C	D	P	A	
P	G	P	D	P	F	S	L	I	G	E	S	T	I	Y	C	G	D	N	S	
V	W	S	R	A	A	P	E	C	K	V	V	K	C	R	F	P	V	V	E	
N	G	K	Q	I	S	G	F	G	K	K	F	Y	Y	K	A	T	V	M	F	
E	C	D	K	G	F	Y	L	D	G	S	D	T	I	V	C	D	S	N	S	
T	W	D	P	P	V	P	K	C	L	K		V	S		H	H	H	H	H	

SEQ. ID NO:24

ATGACCGTCGCGCGGCCGAGCGTGCCCGCGGCGCTGCCC
CTCCTCGGGGAGCTGCCCCGGCTGCTGCTGCTGGTGCTGTTGTGCCTGCCGGCCGTGTGGGGT
GACTGTGGCCTTCCCCCAGATGTACCTAATGCCCAGCCAGCTTTTGGGAAGGCCGTACAAGTTTT
CCCCGAGGATACTGTAATAACGTACAAATGTGAAGAAAGCTTTGTGAAAATTCTGGCGAGAAG
GACTCAGTGATCTGCCTTAAGGGCAGTCAATGGTCAGATATTGAAGAGTTCTGCAATCGTAGC
TGCGAGGTGCCAACAAGGCTAAATTCTGCATCCCTCAAACAGCCTTATATCACTCAGAATTAT
TTTCCAGTCGGTACTGTTGTGGAATATGAGTGCCGTCCAGGTTACAGAAGAGAACCTTCTCTA
TCACCAAACTAACTTGCCTTCAGAATTTAAAATGGTCCACAGCAGTCGAATTTTGTA AAAAG
AAATCATGCCCTAATCCGGGAGAAATACGAAATGGTCAGATTGATGTACCAGGTGGCATATTA
TTTGGTGCAACCATCTCCTTCTCATGTAACACAGGGTACAAATTATTTGGCTCGACTTCTAGT
TTTTGTCTTATTTTCAGGCAGCTCTGTCCAGTGAGTGACCCGTTGCCAGAGTGCAGAGAAATT
TATTGTCCAGCACCAACCAAAATTGACAATGGAATAATTCAAGGGGAACGTGACCATTTATGGA
TATAGACAGTCTGTAACGTATGCATGTAATAAAGGATTCACCATGATTGGAGAGCACTCTATT
TATTGTACTGTGAATAATGATGAAGGAGAGTGGAGTGGCCCACCACCTGAATGC
TCGAGTCCTAACAAATGCACGCCCTCCAAATGTGGAAAATGGAATATTGGTATCTGACAAC
AGAAGCTTATTTTCTTAAATGAAGTTGTGGAGTTTAGGTGTCAGCCTGGCTTTGT CATG

AAAGGACCCCGCCGTGTGAAGTGCCAGGCCCTGAACAAATGGGAGCCGGAGCTACCAAGC
TGCTCCAGGGTATGTCAGCCACCTCCAGATGTCCTGCATGCTGAGCGTACCCAAAGGGAC
AAGGACAACCTTTTCACCTGGGCAGGAAGTGTTCTACAGCTGTGAGCCCGGCTACGACCTC
AGAGGGGCTGCGTCTATGCGCTGCACACCCCAGGGAGACTGGAGCCCTGCAGCCCCCACA
TGTGAAGTGAAATCCTGTGATGACTTCATGGGCCAACTTCTTAATGGCCGTGTGCTATTT
CCAGTAAATCTCCAGCTTGGAGCAAAAGTGGATTTTGTGTTGTGATGAAGGATTTCAATTA
AAAGGCAGCTCTGCTAGTTACTGTGTCTTGGCTGGAATGGAAAGCCTTTGGAATAGCAGT
GTTCCAGTGTGTGAACAAATCTTTTGTCCAAGTCCTCCAGTTATTCCTAATGGGAGACAC
ACAGGAAAACCTCTGGAAGTCTTCCCTTTGGAAAAGCAGTAAATTACACATGCGACCCC
CACCCAGACAGAGGGACGAGCTTCGACCTCATTGGAGAGAGCACCATCCGCTGCACAAGT
GACCCTCAAGGGAATGGGGTTTGGAGCAGCCCTGCCCTCGCTGTGGAATTCTGGGTCAC
TGTGAGGAGCCACCAACATTTGAAGCTATGGAGCTCATTGGTAAACCAAAACCCTACTAT
GAGATTGGTGAACGAGTAGATTATAAGTGTAAGGATACTTCTATATACCTCCTCTT
GCCACCCATACTATTTGTGATCGGAATCATACTGGCTACCTGTCTCAGATGACGCCTGT
TATAGAGAAACATGTCCATATATACGGGATCCTTTAAATGGCCAAGCAGTCCCTGCAAAT
GGGACTTACGAGTTTGGTTATCAGATGCACTTTATTTGTAATGAGGGTTATTACTTAATT
GGTGAAGAAATTCTATATTGTGAACCTAAAGGATCAGTAGCAATTTGGAGCGGTAAGCCC
CCAATATGTGAAAAGGTTTTGTGTACACCACCTCCAAAATAAAAAATGGAAAACACACC
TTTAGTGAAGTAGAAGTATTTGAGTATCTTGATGCAGTAACTTATAGTTGTGATCCTGCA
CCTGGACCAGATCCATTTTCACTTATTGGAGAGAGCAGGATTTATTGTGGTGACAATTCA
GTGTGGAGTCGTGCTGCTCCAGAGTGTAAGTGGTCAAATGTCGATTTCCAGTAGTCGAA
AATGGAAAACAGATATCAGGATTTGGAAAAAATTTTACTACAAAGCAACAGTTATGTTT
GAATGCGATAAGGGTTTTTACCTCGATGGCAGCGACACAATTGTCTGTGACAGTAACAGT
ACTTGGGATCCCCCAGTTCCAAAGTGTCTTAAA//GTGTCG//CATCACCATCACCATCAC
TAAAGATCT

WESTERN BLOT OF HYBRID PROTEINS **DAF-IgG4, DAF-CR1BB, and DAF-CR1B**

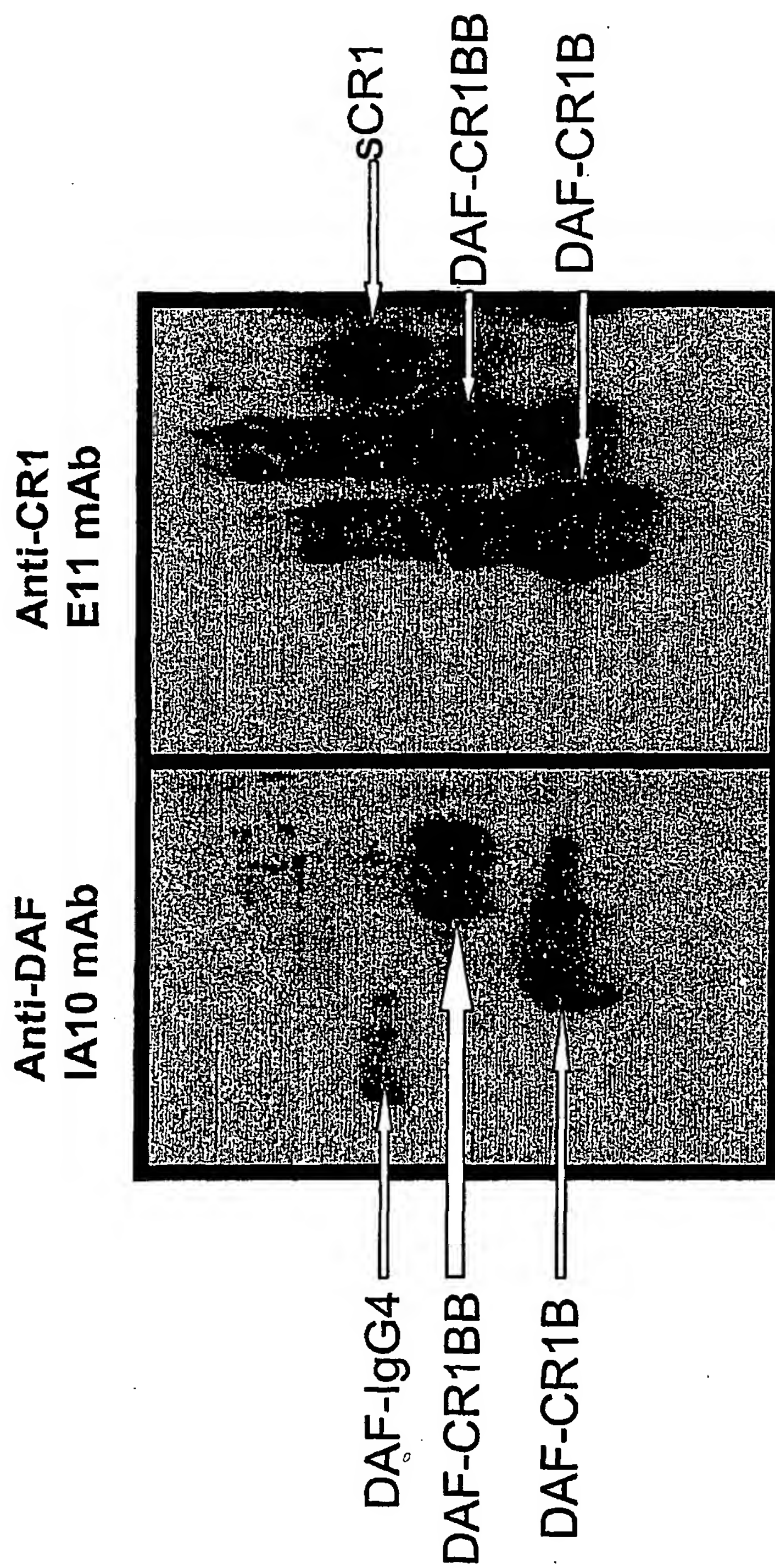


Fig. 14

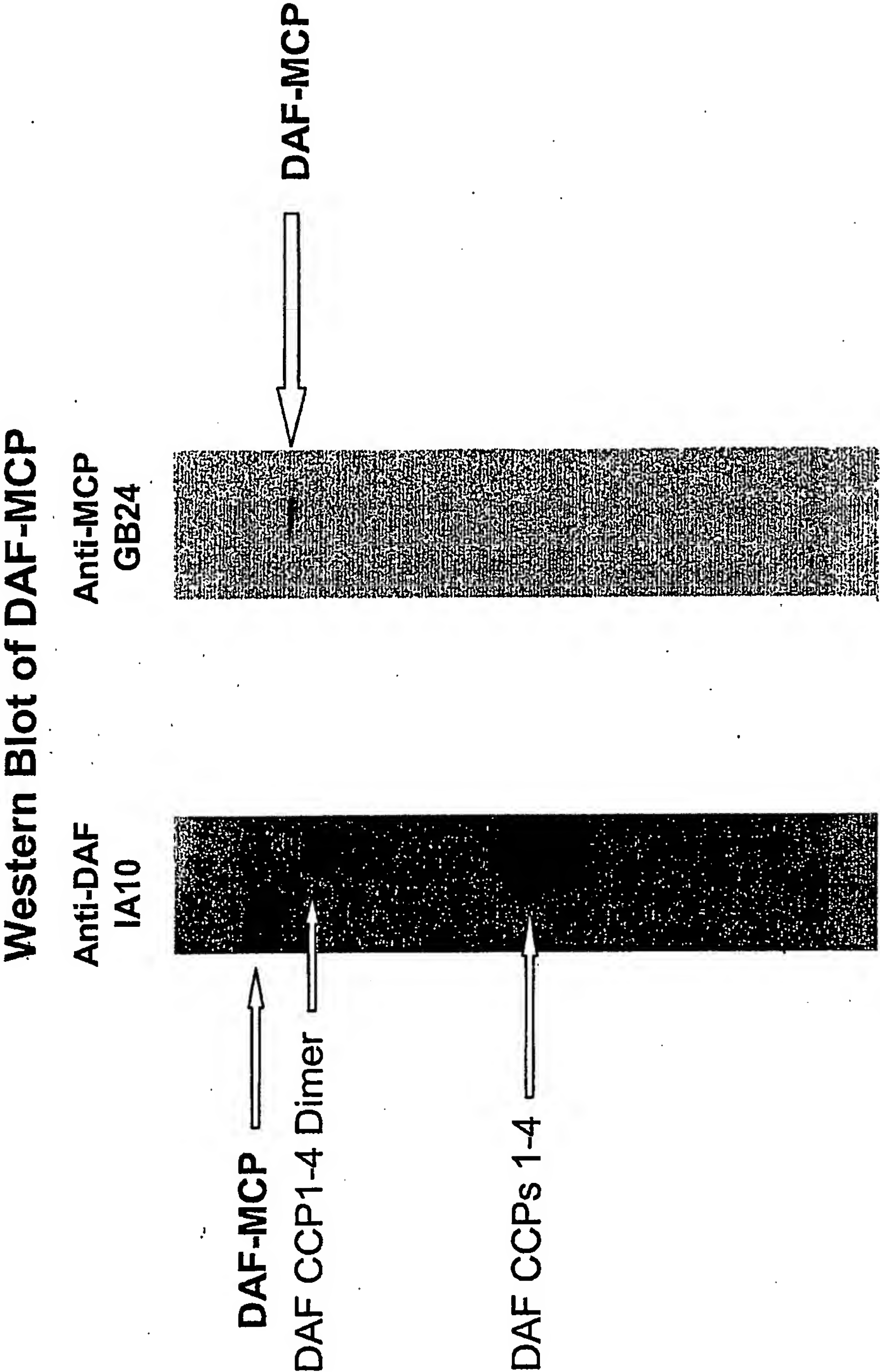


Fig. 15

Whole Serum Hemolytic Assay
DAF-CR1BB vs. Soluble CR1

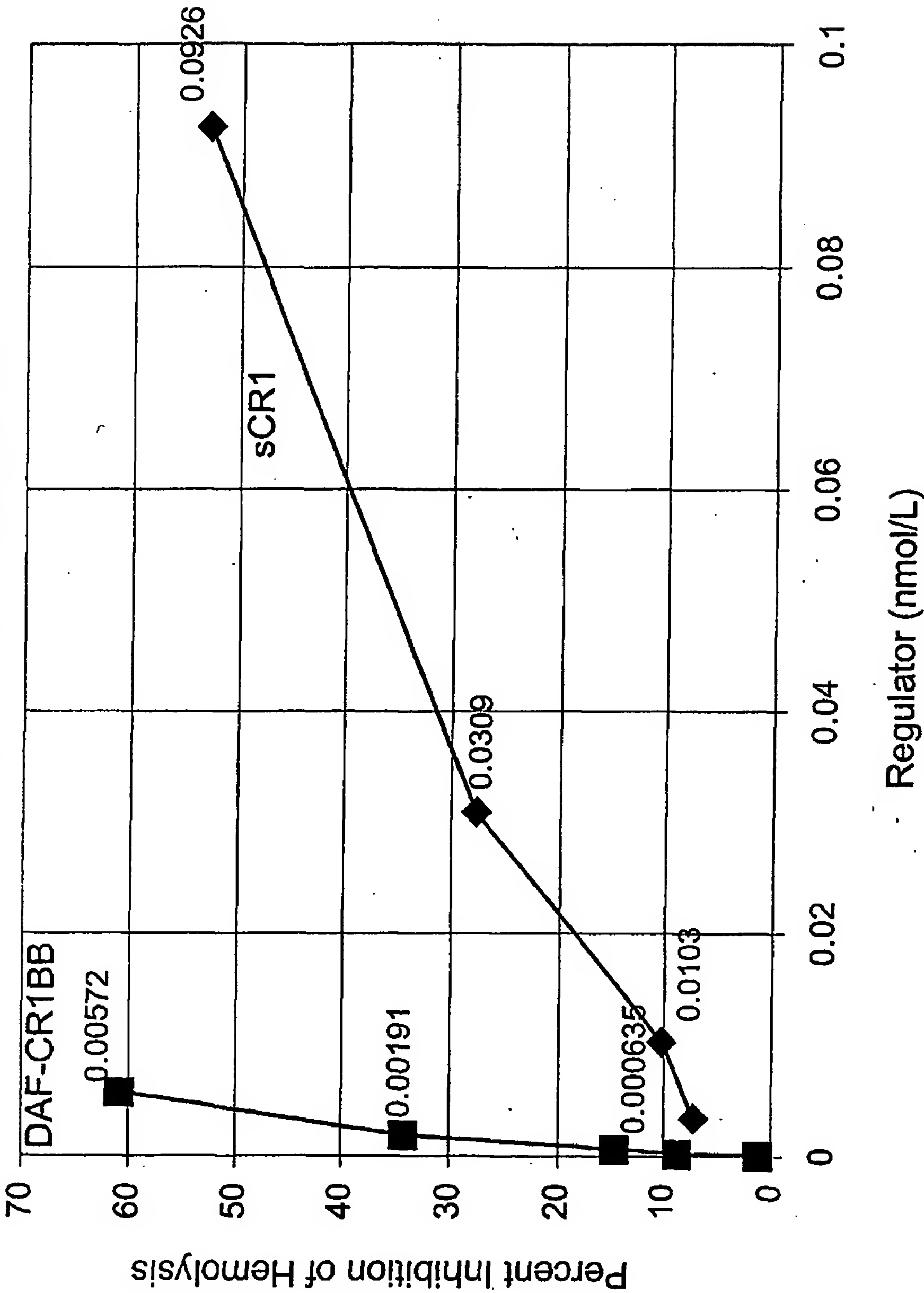


Fig. 16

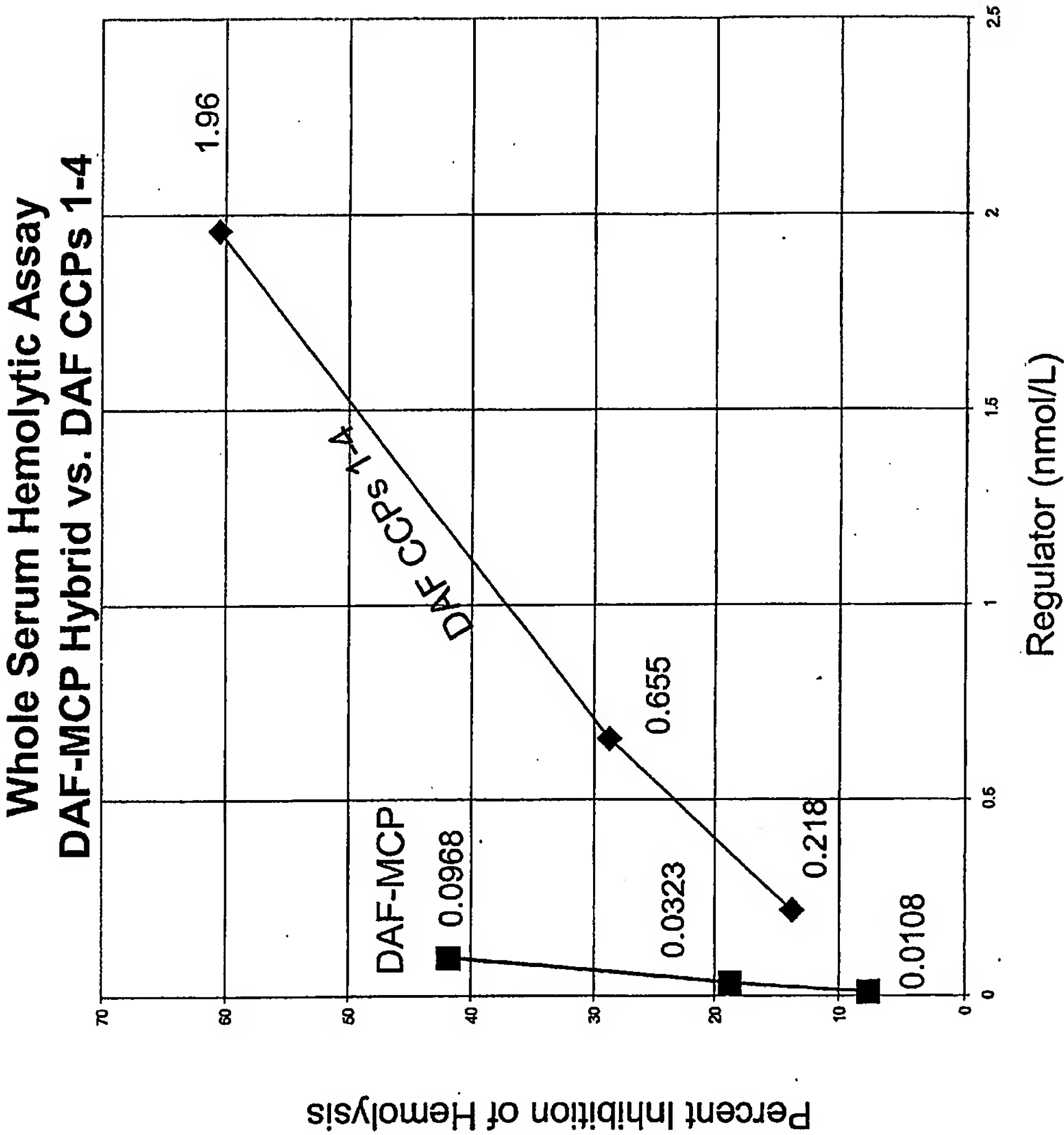


Fig. 17

Classical Pathway C3 Convertase Decay

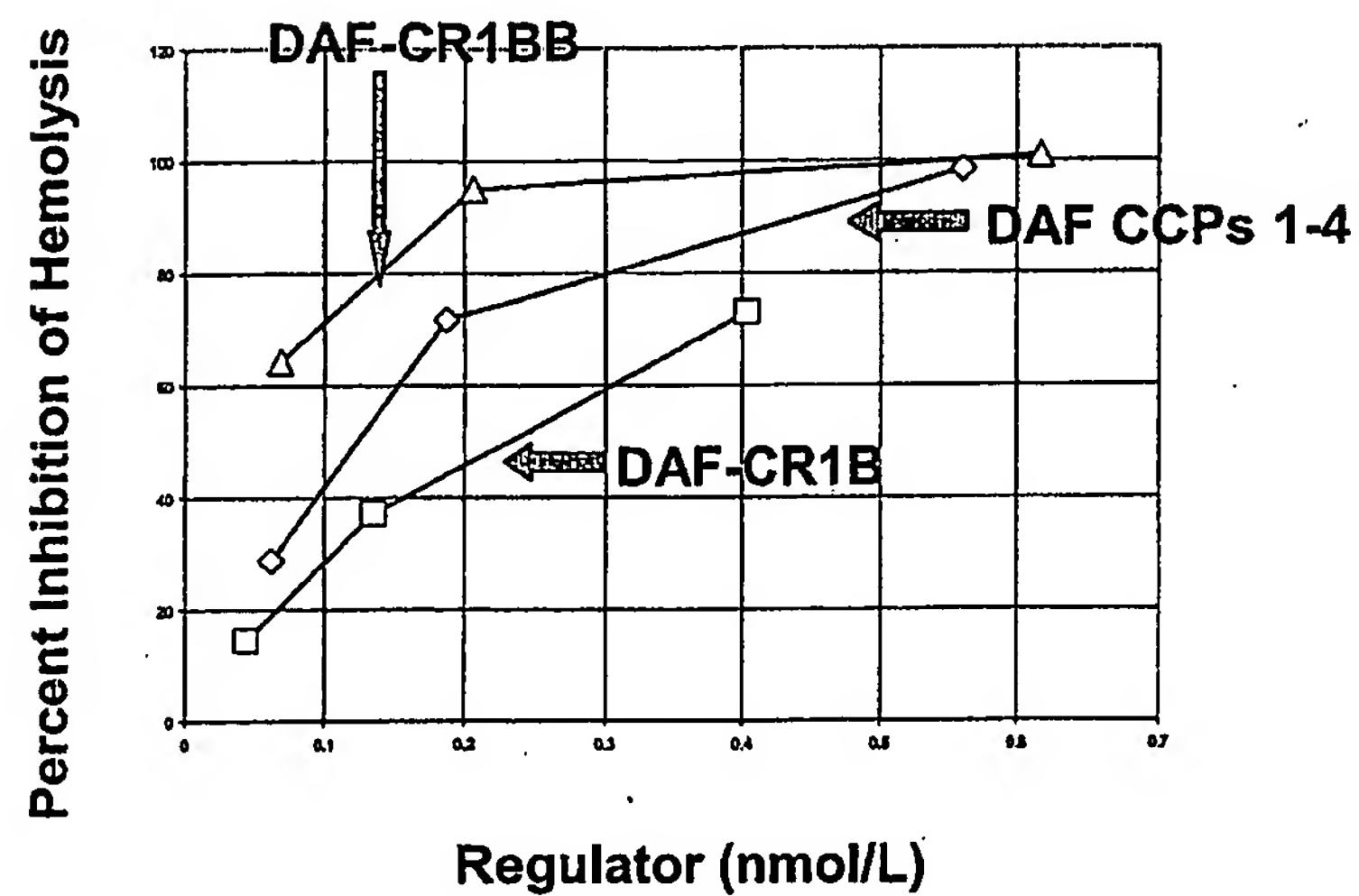


Fig. 18A

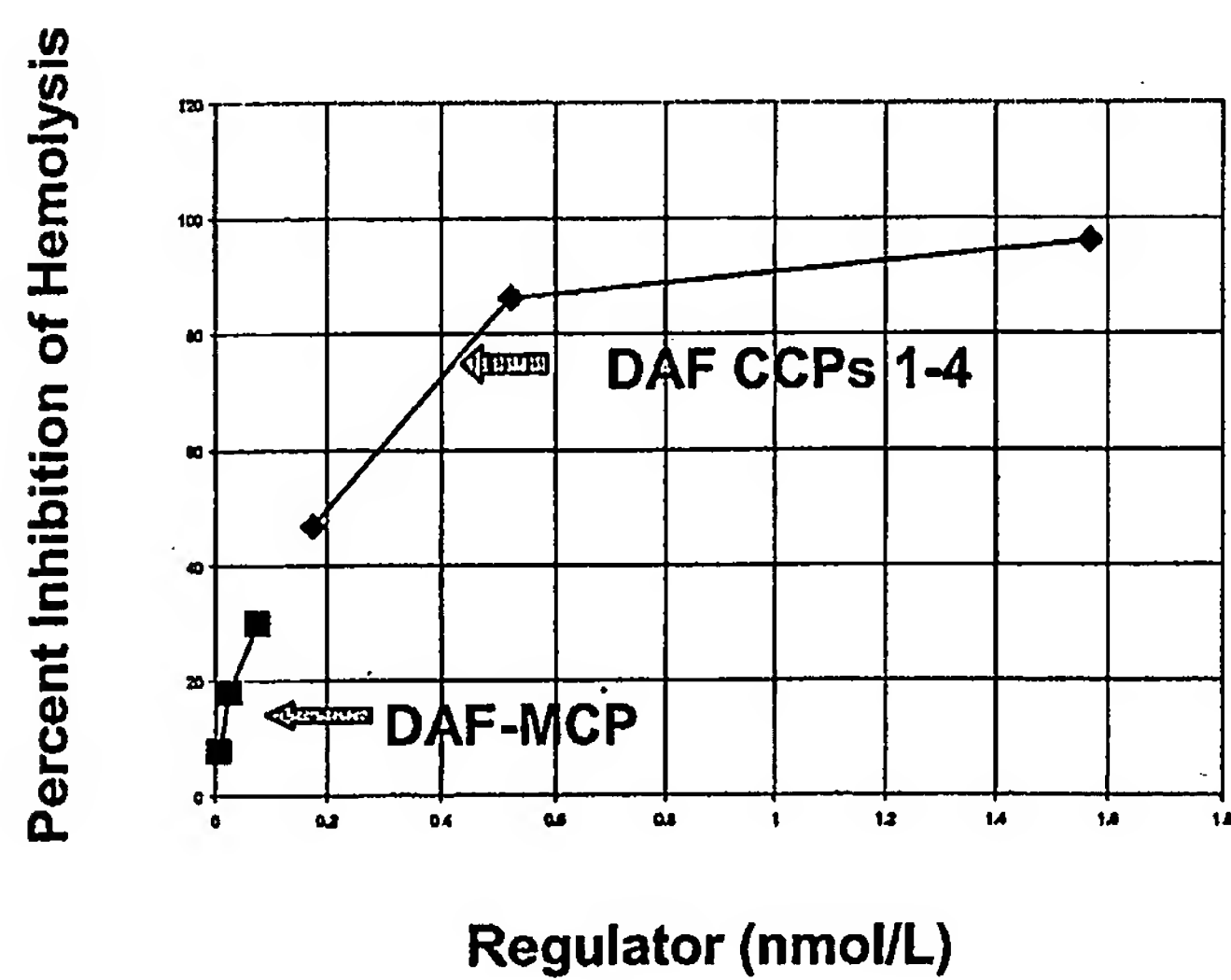


Fig. 18B

Classical Pathway C5 Convertase Decay
DAF-CR1B vs DAF CCPs 1-4

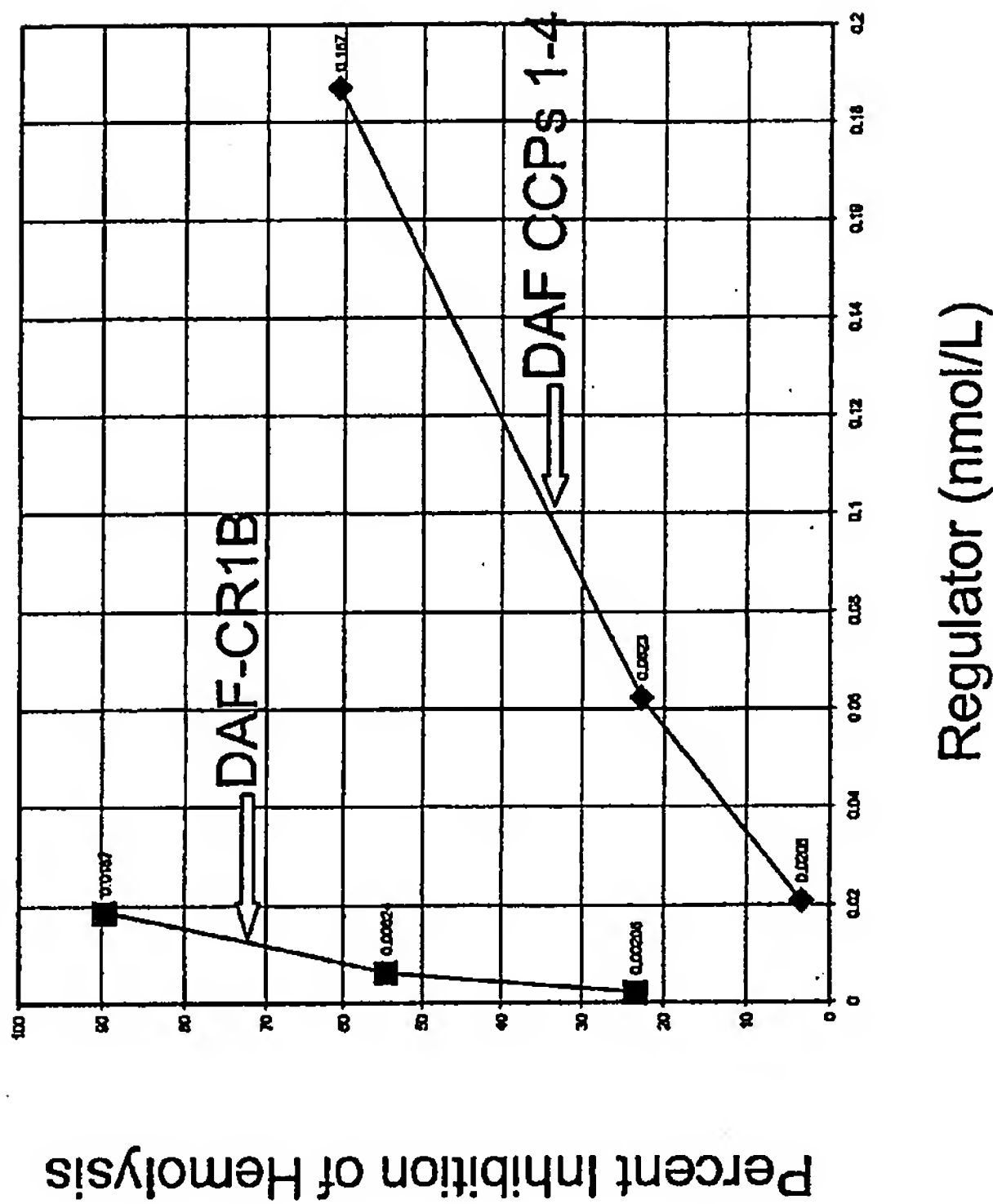


Fig. 19

Classical Pathway C5 Convertase Decay DAF-CR1BB vs sCR1 vs DAF-CR1B

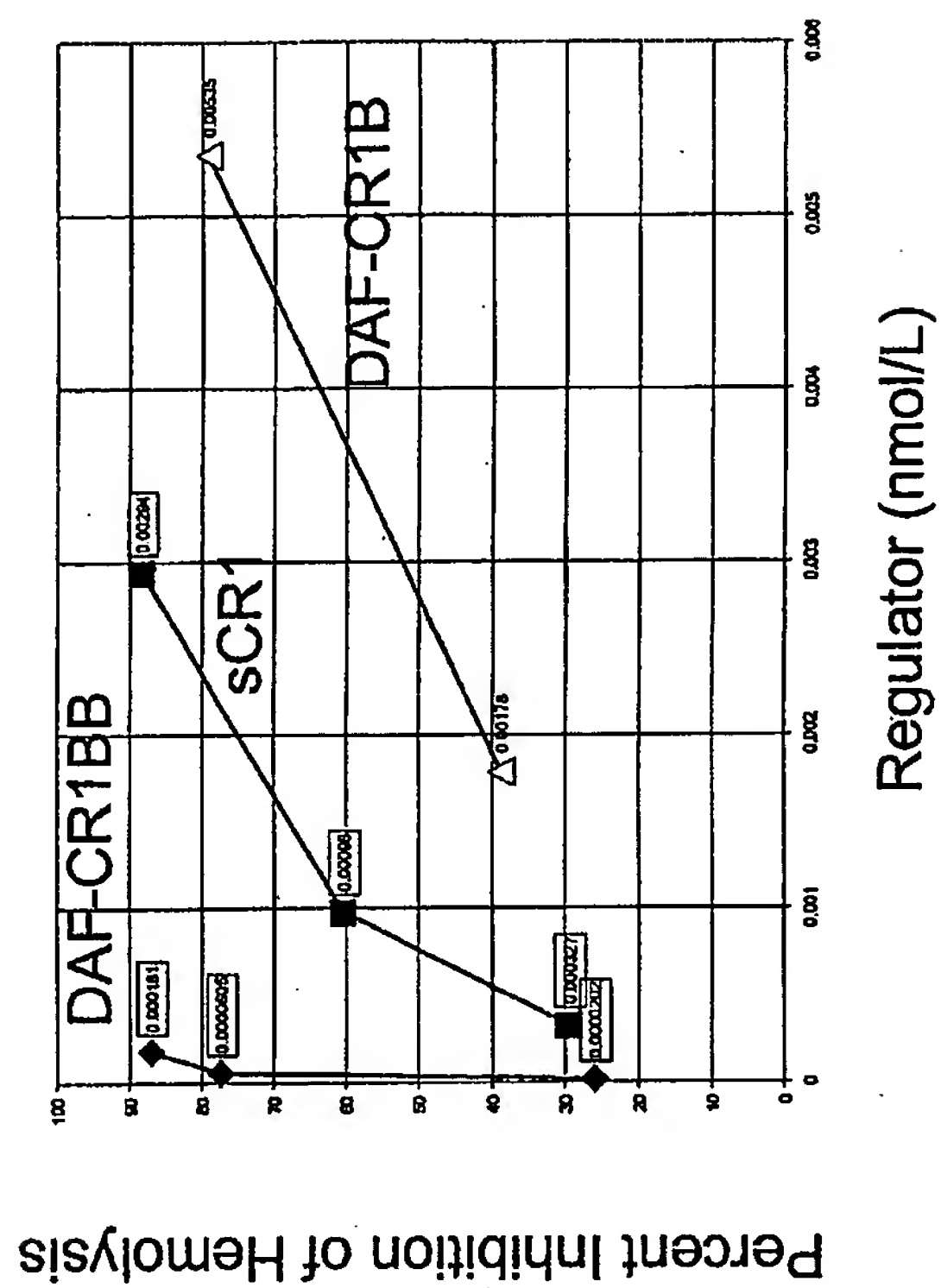


Fig. 20

Cell-bound (E^{sh}C4b3b) Cofactor Assay

Cell Supernatant
(Anti-human C3 pAb)
COS SN DAF-MCP DAF-CR1BB

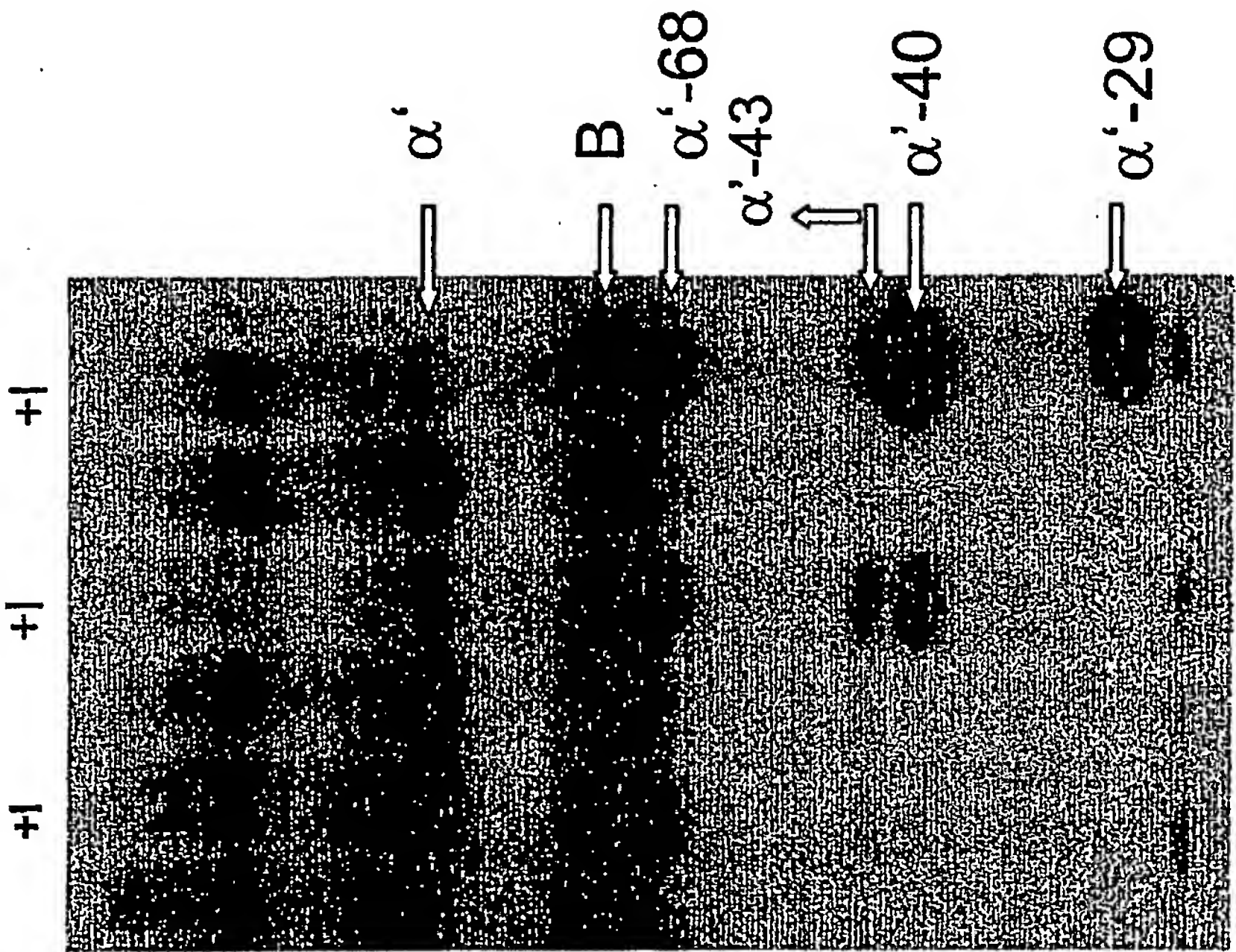


Fig. 21

Cell-bound (EshC4b3b) Cofactor Assays
Cell Supernatant

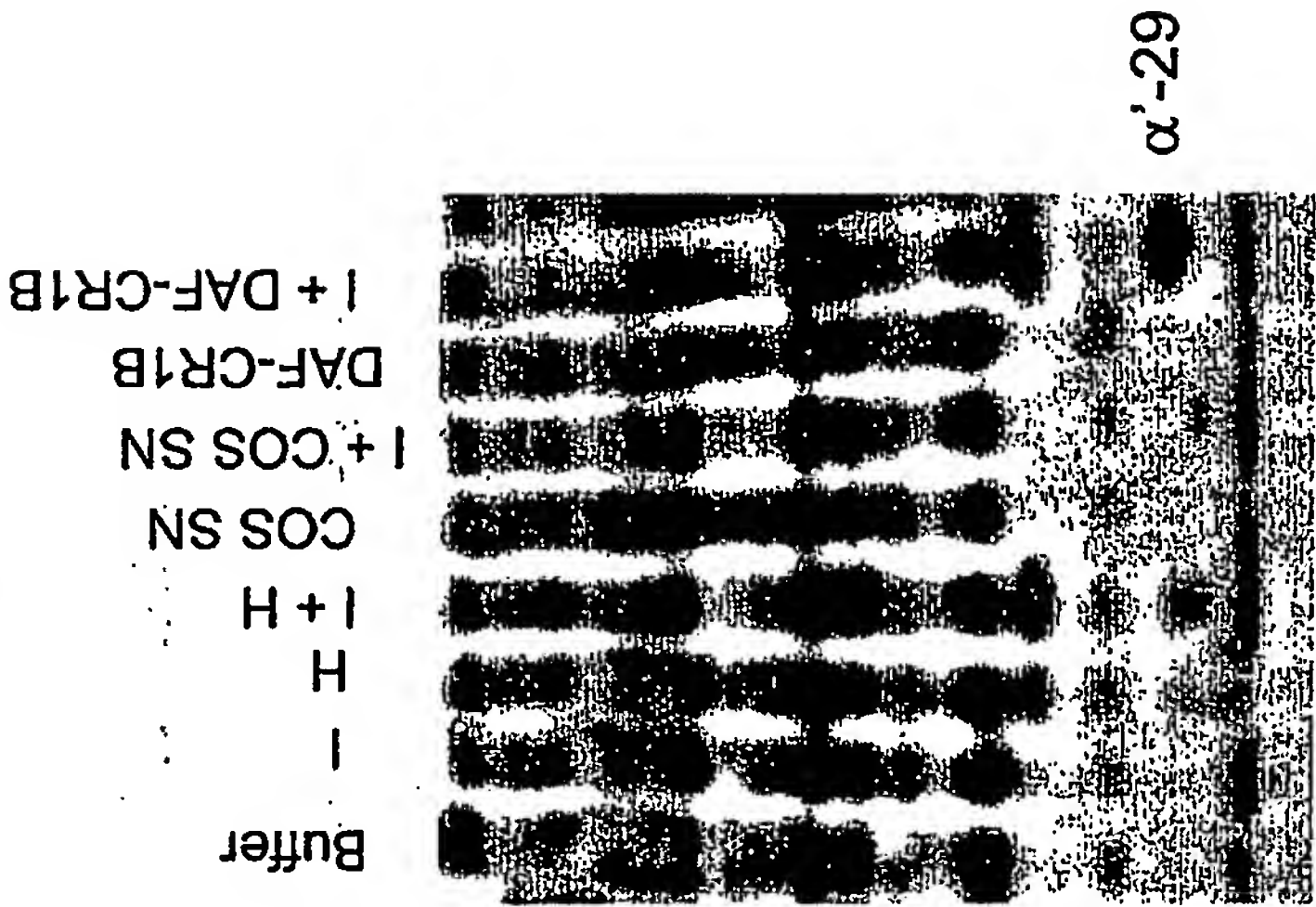


Fig. 22